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REMEDIAL PROJECT MANAGERS' MEETING

NASA/JET PROPULSION LABORATORY

7 September 2000

ATTENDEES:

Charles L. Buril, JPL

Mark Cutler, Foster Wheeler

Richard Gebert, DTSC

Vitthal Hosangadi, Foster Wheeler

Tim Howell, NASA Management Office

Mark Losi, Foster Wheeler

Heike Mueller, TechLaw (via telephone)

Judith A. Novelly, JPL

Mark Ripperda, USA EPA

Peter Robles, Jr., NASA

Richard J. Zuromski, Jr., Navy/Nasa

Reported by: Louise K. Mizota, CSR 2818

Pasadena, California

September 7, 2000

9:45 A.M.

ROBLES: Why don't we start going around the room, with this extinguished gentleman here.

HOWELL: I'm Tim Howell. I'm NASA's counsel here at the (INAUDIBLE).

ZUROMSKI: Richard Zuromski from the Navy in Port Hueneme.

RIPPERDA: Mark Ripperda from EPA.

GEBERT: Richard Gebert from DTSC.

HOSANGADI: Vitthal Hosangadi at Foster Wheeler.

LOSI: Mark Losi, Foster Wheeler.

NOVELLY: Judy Novelly, JPL.

BURIL: Chuck Buril, JPL.

CUTLER: Mark Cutler, Foster Wheeler.

ROBLES: Peter Robles, NASA Management Office, the Remedial Project Manager for this JPL site.

I want to start off with our agenda on the groundwater pilot studies. So I want to turn that over to Richard.

ZUROMSKI: See if we can get Alex on the line one more time. He's really important to this.

ROBLES: He's the one that wanted this.

1 ZUROMSKI: Right. He's the one that wanted
2 this, so --

3 (Discussion held outside the record.)

4 RIPPERDA: So we'll just skip number 1 for a
5 while?

6 ROBLES: Right. Why don't we go to agenda item
7 2, the soil feasibility.

8 (Discussion held outside the record.)

9 RIPPERDA: Hello, Heike. It's Mark again.

10 MUELLER: Hi.

11 RIPPERDA: Alex Carlos from the State isn't
12 available right now, so we're going to skip his part
13 and come back to it later. So we're going to move
14 into the soil feasibility study.

15 MUELLER: Okay.

16 ROBLES: All right. So what we want to do,
17 first of all, is talk about it and then also talk
18 about the EPA comments to the soil vapor extraction
19 design. So you want to go?

20 MUELLER: Would it be possible to go around the
21 table and let me know who's there?

22 RIPPERDA: We did that, but just really quick,
23 that was Peter Robles from NASA.

24 Richard Zuromski from the Navy is probably
25 going to be doing most of the talking. And then

1 there's a few other random people. I'll give you a
2 sign-up sheet afterwards.

3 MUELLER: Okay. That's fine.

4 ROBLES: What we wanted to do is, first of all,
5 we got the comments on the SVE. And what we wanted
6 to do is first look over generally what were your
7 concerns on that. We have read your comments. We
8 would like that the Foster Wheeler folks take those
9 comments and address them in a letter format back to
10 the EPA so that you can look at the response. We
11 believe that we have addressed some of them.

12 So does anybody want to talk from the
13 Foster Wheeler's side?

14 HOSANGADI: I figured we could go through them.
15 There are some questions that we have about the
16 comments. And there are -- you know, we want to
17 understand what some of your concerns are on some of
18 the comments so that we can come up with a valid
19 response to them.

20 ROBLES: So why don't you go through that.

21 RIPPERDA: I guess before we talk about that,
22 that's just our general comments on the SVE. So is
23 there -- shall we just get the FS out of the way
24 first? Is there any questions about the FS? Are
25 you guys going final with it?

1 BURIL: As far as the FS is concerned, I'm
2 looking for the letter that discusses that right
3 now. I know I have a copy of it here.

4 Changing it in the fashion that you
5 identified doesn't really pose a problem for us as
6 long as it's recognized that we don't have to
7 address the SVE letter specifically in order to
8 allow it to go final.

9 RIPPERDA: Yeah. Not at all.

10 BURIL: As far as that's concerned, then,
11 changing the document as indicated doesn't really
12 pose that much of a concern for us. And we should
13 be able to address those changes here in the next
14 two, three weeks without too much difficulty.

15 ROBLES: When do you expect the final document
16 to come out?

17 BURIL: Probably mid this month.

18 ROBLES: Okay.

19 BURIL: Somewhere in that range.

20 GEBERT: So I can tell my boss that the OU-2 FS
21 is approved and final. Right? That's a fair
22 statement?

23 ROBLES: That's a tentative right.

24 GEBERT: That's a correct statement?

25 ROBLES: That's a fair statement, minus the SVE

1 design, which we are addressing as a separate issue
2 within that.

3 RIPPERDA: Right. The SVE design was not truly
4 part of the FS. The FS talks about SVE because it
5 has to.

6 ROBLES: Right.

7 RIPPERDA: But it's not a necessary component of
8 the FS.

9 ROBLES: So in the sense, yes, Richard, you
10 could say that the FS is complete when we send it
11 out.

12 CUTLER: You'll probably receive replacement
13 pages, replacement cover sheets that say "Final" on
14 it and the replacement pages to address Mark's
15 letter. It will probably come in a package and a
16 three-ring binder, Mark will probably put together,
17 replace these pages with these pages so it will be
18 very clear and then it will be a final.

19 GEBERT: The RI.

20 CUTLER: As Chuck says, in a few weeks.

21 BURIL: Yes.

22 RIPPERDA: On the FS, it kind of spills over
23 into the SVE design, but the FS had Appendix C about
24 shutoff criteria. And I don't actually have a copy
25 of the Regional Board's shutoff criteria. I don't

1 know if Appendix C was just a --

2 HOSANGADI: It was based on those.

3 RIPPERDA: -- was pretty much just a summary of
4 that and the whole asymptotic design concept is
5 based on Regional Board's requirements.

6 LOSI: And the modeling requirements as well.

7 HOSANGADI: Basically, we took the Board's
8 guidance on how they deal with soil extraction sites
9 where there are VOCs and they have this methodology
10 of estimating levels of VOCs in soils that you can
11 leave behind that are still considered predictive of
12 groundwater.

13 Now, of course, at this site and at many
14 other Water Board sites they have required that soil
15 data not be considered, which in fact is true here
16 as well, and they provide an equation for connoting
17 the soil concentration that you find that is
18 predictive of the groundwater. Let's say, for
19 example, it's 5 micrograms per kilogram. They give
20 you an equation to connote that microgram per
21 kilogram into a soil vapor concentration, which you
22 can then compare with soil vapor concentration from
23 probes.

24 Granted, it's not the best way of doing
25 it, but if you don't have soil concentrations, that

1 is a reasonable way of approaching it. Of course,
2 they do have a caveat that, you know, that's not the
3 end all. We would have wanted to collect soil
4 samples and analyze for VOCs which is kind of
5 counterproductive because we've started off saying
6 that we're not going to do that and -- but, you
7 know, we tried to work within the confines of that
8 while still trying to be, you know, technically
9 sound.

10 RIPPERDA: Okay. Some of that didn't quite come
11 across in Appendix C. The Appendix C spent so much
12 time on the rebound --

13 HOSANGADI: That is true. It so happens that
14 this is a critical aspect. I mean the way they
15 actually laid it out is pretty straightforward.

16 They said first of all, you design it so
17 that you're getting absolute coverage and you
18 operate it and you make sure that as you operate it
19 you are essentially evaluating your design.

20 Say, for example, we said we need four
21 extraction wells for the site. You make sure that
22 as we are pulling from those four extraction wells
23 we are, indeed, seeing a good flow from the site,
24 you know, in monitoring points all the way from the
25 wells. We also keep track of the VOCs that are

1 coming out. We will also keep track of the VOCs in
2 individual monitoring points. So, for example, if
3 you were to get a lot of VOC removal but you have
4 monitoring points that are 1,000 PPM, does that mean
5 that SVE is effective, even though it might have
6 pulled out a million pounds? Not necessarily.

7 So they look at all these patterns
8 concurrently. And when all of those have happened,
9 when we have validated the design, when we see that
10 we have removed as much as we can remove of the SVE
11 wells, we've seen that the concentrations in the
12 monitoring points are, indeed -- have also
13 decreased. Then they recommended to go into the
14 cycle of shutdown and rebound where you would shut
15 the system off, you know, for almost up to a year
16 and take samples before you shut down and then on a
17 quarterly basis after the shutdown and see how much
18 rebound there is.

19 Now, as far as the rebound goes, though,
20 it's not straightforward. The rebound is not a
21 function of the number itself, but it's tied into
22 that soil gas cleanup goal that I mentioned earlier,
23 which makes it a little bit difficult at some sites.
24 So say, for example, we reach 100 micrograms per
25 liter and you're not able to go any lower than that.

1 The amount of rebound they allow you is not a
2 function of that hundred. On the other hand, say if
3 our cleanup level was 5 micrograms per liter, they
4 allow you 50 percent of that number as your rebound.
5 So they will say in that case, yes, you reached 100
6 microgram per liter, you can only go up to 102.5.
7 If you go to 102.6, that is considered to be -- you
8 know, the rebound is not acceptable. So that's the
9 way the Water Board got it set up.

10 Now, you know, one can question the logic
11 of that because, you know, in that case the amount
12 of rebound is not tied into the initial number. But
13 we still assume that that would work when we took
14 that into account.

15 RIPPERDA: Actually, your explanation sounds
16 great. It sounds much better than what I got from
17 reading Appendix C.

18 ROBLES: Do you want that to be explained
19 better?

20 RIPPERDA: Actually, my comment here, like I
21 don't know which ones of these are going to be blown
22 off and which aren't. But I would like to see --

23 HOWELL: We give more deference than that.

24 RIPPERDA: I would like to see Appendix C
25 removed from the FS.

1 BURIL: That's not an issue. That's fine.

2 RIPPERDA: And then all of that dealt with in
3 more detail like you're talking now.

4 BURIL: In the design criteria.

5 RIPPERDA: In the design criteria.

6 HOSANGADI: Right. Because actually, you know,
7 the thing from Castle Air Force Base that you sent,
8 that is essentially an expansion of that same
9 concept because where the Water Board doesn't take
10 financial considerations into account. The stop
11 method does -- I've been at a couple of sites where
12 we do, indeed, look at how much impact the soil
13 would have on the groundwater in the future, either
14 by V-leach or I've used AT 123D at another site.
15 But it also looks at if you were to continue running
16 the SVE system, how many more pounds of VOCs are we
17 going to pull out, what the cost of the extra
18 removal is going to be versus letting it remain in
19 the soil.

20 Now, unfortunately, it has to be tied into
21 a groundwater remedy. For example, if you have 10
22 pounds of VOCs left in the soil and you've pulled
23 out 2,000, and you have a system in place to address
24 the groundwater, which is what I have at one of my
25 sites, is the extra effort in terms of getting those

1 last 10 pounds out worth it as opposed to just
2 either letting it remain in there and degrade and,
3 you know, eventually go to groundwater when you have
4 a remedy downgradient in place already.

5 So the stop method basically takes
6 economics into account, you know, whereas the Water
7 Board method doesn't take that into account. If you
8 have it, you have to do it. It doesn't take into
9 account the fact that well what if the VOCs are, you
10 know, a minuscule possibility of water there to
11 start with and what if they are right at the water
12 level interface. Your SVE system is probably not
13 going to be able to get it, but it would go into the
14 water and if you did, you would have an extraction
15 system downgradient so it -- the stop method
16 basically is more forgiving and more realistic in
17 that sense.

18 So, you know, by taking the Water Board
19 approach, it's not that they're taking a less
20 stringent approach. In fact, it's a more stringent
21 approach because they're not taking into account the
22 fact that there is or there may be downgradient
23 extration wells, or in fact in this case, you know,
24 of course they are a bit more downgradient than you
25 would want, but, indeed, it is being addressed.

1 RIPPERDA: Yes. No. I don't have any problem
2 with the Water Board method. And I do think at a
3 system like this where you do have integrated
4 groundwater and SVE system --

5 HOSANGADI: Right.

6 RIPPERDA: -- that you can certainly make a case
7 for doing exactly what you're saying.

8 HOSANGADI: Exactly. Now, while on that topic,
9 there's one important part of the Water Board
10 methodology that can always trip up, and I've seen
11 it trip up a couple of sites, is right at the -- in
12 the soil right above the water table you might have
13 VOCs.

14 Now, if you were to have an SVE system,
15 your efficiency right near the water table is
16 probably going to be minimal unless you've actually
17 got wells that are screened right and the water
18 level has gone down a little bit. In their view,
19 what happens is you might have some VOCs in the
20 groundwater, which may offgas and you might always
21 have some higher level of VOCs right at the water
22 table.

23 With the Water Board's method, basically,
24 and logically so, the lower the point is, the more
25 stringent the cleanup level. In other words, if the

1 point where the point of compliance, if you will,
2 is, say, five feet above the water table, the
3 cleanup level might be 5 microgram per liter. If it
4 is 100 feet above, the cleanup level might be 50
5 because of the distance. So it's always at odds in
6 that bottom portion.

7 So when you apply the Water Board's
8 method, if you do, indeed, find that we are having a
9 rebound more than 50 percent of the cleanup level,
10 which is already very low -- it's actually at 5
11 microgram per liter most -- in fact, even less than
12 1 microgram per liter for some compounds. And if
13 you have a concentration of 3 and you can only go up
14 by .2 microgram per liter, I mean, how easy or
15 difficult is that? A very small variation will
16 cause it to go up a point. So it's always a
17 questionable in that bottom layer whereas the stop
18 method would take this into account because there is
19 a means of, you know circumventing that particular
20 aspect, if you will.

21 So that was, you know, the intent of the
22 Appendix C because -- and what we did, also,
23 elaborate a little more, in there was not really --
24 you look at all of these, you kind of make sure up
25 front that what you designed is appropriate for the

1 site. You know, for example, you cannot apply any
2 of those criteria independently. You have to have
3 reduction in VOCs that are coming out and you have
4 to show that you are, indeed, impacting your entire
5 area. And those two lines of evidence, you know,
6 concurrently show that you've done what you can.
7 Because if you haven't got enough clear -- haven't
8 got enough knowledge, you might get fantastic
9 removal, but you might have 1,000 pounds left in
10 there.

11 RIPPERDA: Right.

12 HOSANGADI: That's why it's, you know, it's
13 parallel the lines of reasoning. They don't
14 converge except at the end point.

15 ROBLES: So let me get this straight. That
16 Appendix C for OU FS will be removed. We will
17 augment the discussion as you have stated so that we
18 can make sure that Mark's --

19 BURIL: I don't think we need to augment the
20 discussion. I think all we need to do is make the
21 point that the design criteria, when they're
22 developed, will need to include shutoff criteria.

23 ROBLES: Okay.

24 BURIL: That will defer it to a design problem
25 as opposed to an FS problem, which I think is

1 probably more appropriate anyway.

2 ROBLES: Which is what you're looking for.

3 RIPPERDA: Right. I want a nice clear statement
4 in the FS that the shutoff criteria were based on
5 Regional Water Board requirements and protection of
6 groundwater.

7 BURIL: That's all the more that we need to
8 address that one. And then just simply remove
9 Appendix C and any references that we make to it.

10 HOSANGADI: Right. Exactly. Exactly.

11 BURIL: And we have addressed that comment.
12 It's not critical to the FS completion to that, that
13 be in there. It is critical to design and operation
14 parameters, but certainly not to an FS.

15 HOSANGADI: I should also point out that it
16 turns out that a number of the soil gas levels, if
17 you were to, indeed, calculate the cleanup levels, a
18 number of them are already below those levels,
19 because we are talking in the single-digit microgram
20 per liter. Particularly for somewhere around 50
21 feet above the water level most of those points at
22 this point in time are probably below their
23 requisite cleanup levels.

24 CUTLER: That pilot test, in reality, has been
25 wildly successful, if you look at real data.

1 RIPPERDA: Yeah.

2 ROBLES: That's what we're looking for here.

3 Okay. Shall we move on to the comments
4 for the SVE design?

5 BURIL: Mark, are you satisfied with --

6 RIPPERDA: Yeah. No. That sounds great.

7 ROBLES: Could you, Mark, put down the phone
8 number of the person that's on there and her name so
9 that way we can keep it.

10 Why don't you go --

11 HOSANGADI: Let's just go through them one by
12 one. Comment number one relates to -- it partly
13 relates back to the RI in the sense that, you know,
14 it's being suggested that the soil vapor probes that
15 were put in to get the -- you know, get an idea of
16 where the VOCs were, were not necessarily placed in
17 the right spot. And on looking at the RI they were,
18 indeed, placed in the right spot.

19 Now, one distinction to make, though, is
20 we wouldn't want to put a soil vapor extraction well
21 where a spill might have occurred. We would
22 obviously put a soil vapor extraction well or wells
23 where the VOCs are. So the fact that there were
24 some drums that were disposed to land for a number
25 of years and the fact that there were some tubs that

1 were used to soak parts really has no bearing on
2 where you put the extraction well, because what if
3 the soil vapor probes right below that spot came up
4 nondetect? You wouldn't want to put a vapor
5 extraction well there.

6 On the other hand, if you were to see some
7 areas of the site that were distinctly higher than
8 the rest of the site, that's where you would want to
9 put the vapor extraction well. And as it turns out,
10 that's exactly what we did. We looked at the areas
11 where there were spills. We compared, you know,
12 compared that knowledge to the VOC levels in the
13 probes and we didn't find much there. We found
14 other places where, indeed, the concentrations were
15 two to three orders of magnitude higher. And so we
16 placed our well right there.

17 Now, the fact that it is 450 feet away
18 from where the disposal might have occurred has
19 really no bearing on it because -- just because 450
20 feet away had disposal doesn't mean that we have
21 VOCs there. So that essentially is our response to
22 the first one.

23 Now, as far as the single line of
24 evidence, that is something that we are almost
25 forced to do, because for this site, as for many

1 other sites in this area, the Water Board has
2 specifically said that you will not depend on soil
3 VOC data. And the reason for that, I should
4 explain. Normally when you have soils that don't
5 have very much organic matter in them, as is the
6 case for most of the soils in California, at least,
7 you know, most of the sites that I have dealt with
8 that has been the case.

9 You very often end up in a situation where
10 you go and do a soil boring and you collect samples.
11 You send it off to the lab. The VOCs come back
12 close to nondetect. You take a sample of the
13 groundwater below the site and it has tens or
14 hundreds of micrograms per liter. How do we, then,
15 explain the fact the water is contaminated and the
16 soil is not? Does that mean that all of the
17 contamination in the soil has reached the
18 groundwater? Absolutely not. If you were to, from
19 those same wells, collect a soil vapor sample, you
20 will almost always find evidence of VOCs in there.
21 And as a result, that's actually the main reason why
22 the Water Board started moving -- I think DTSC is
23 also pushing towards moving away from soil samples.

24 Now, of course, EPA has (UNINTELLIGIBLE)
25 recommends that there is a problem with collecting

1 soil samples in the way that people have been
2 looking and collecting them and they have come up
3 with Method 5035, which to some extent, you know,
4 takes into account all of the, you know, the
5 problems with the conventional way where, you know,
6 we would collect a sample and most of it probably
7 would volatilize right there. We did not obviously
8 have the benefit of that method 10 or 12 years ago
9 when some of these things were done. So to a great
10 extent we are forced to that single line of evidence
11 and we are trying to use it to the best extent
12 possible.

13 CUTLER: Right. Just a little caveat. In the
14 early days we proposed soil samples. We were told
15 by the agencies not to do it. So I guess the issue
16 on why soils samples were not collected probably
17 should be addressed to the Water Board. It's hard
18 for us to --

19 HOSANGADI: Right. Right.

20 CUTLER: -- answer for them. We will do the
21 best we can, but it was their call.

22 RIPPERDA: Right.

23 BURIL: Well, let's go back just a little bit
24 more in history on that as well, because given the
25 geology that we have here, all of the fellows that

1 have been working on the site for a while know that
2 the drilling conditions here are a nightmare when it
3 come to trying to get soil samples or even just to
4 advance a well.

5 So we've typically used -- up until the
6 time that sonic drilling became available to us, we
7 typically used an air percussion rig or something
8 like that to hammer through rock. Well, the
9 introduction of air was a method that the Regional
10 Board, and I believe DTSC also, both just said "No.
11 We cannot allow that. We cannot allow a soil sample
12 that has been subjected to high-pressure air in the
13 construction of this well to be used for vapor or
14 organic analyses that may be volatilized through the
15 introduction of that air."

16 So we need soil vapor wells. And in fact,
17 that was the basis for going to soil vapor wells in
18 concept in this entire investigation as opposed to
19 going to the individual sites and doing individual
20 soil sampling. That's why we ended up with 28 soil
21 vapor wells as opposed to the original ones that we
22 had in the draft workplan.

23 CUTLER: We actually in the early days argued
24 against it.

25 BURIL: We did.

1 CUTLER: Because for the very reasons how do you
2 quibble (UNINTELLIGIBLE) rate soil vapor with
3 cleanup levels.

4 HOSANGADI: Right.

5 BURIL: That is exactly right. Yes.

6 CUTLER: We're trying to look past the FS stage.
7 Now what do you do? So there again, it was an
8 agency decision.

9 BURIL: This even predates Peter to a certain
10 degree. So this was a conversation that happened
11 back in the early '90s and we've been following
12 through with that kind of logic and approach all the
13 way through.

14 RIPPERDA: And that's okay. I like --
15 personally I like deep soil vapor wells. I do think
16 for deep wells they give more than soils samples
17 themselves a lot of times. But I didn't look at the
18 RI data again at this point. So when you're
19 comparing your soil vapor data near the source,
20 potential source areas, did you have good location
21 of your soil vapor wells? Did they go deep enough?
22 Since groundwater is highly contaminated right near
23 some of these source areas, do you actually have
24 good coverage with your --

25 HOSANGADI: Yeah, I believe we do.

1 RIPPERDA: -- test wells?

2 HOSANGADI: Yeah. And in fact, it was based on
3 that that we, you know, not looking necessarily
4 around there, but looking all over the place, we
5 found that, indeed, there were much higher levels of
6 VOCs at a, you know, good distance from there. And
7 that's not very -- it happens, you know, it happens
8 all the time. But there was enough time for these
9 things to happen.

10 And in fact, you know, during the course
11 of the test, we did, indeed, and I think we tried to
12 explain it as best as we could in Appendix A. We
13 actually found, at least in the very early portions
14 of the test, we found what we think were slug or
15 slugs of TCE. And basically what we were doing was,
16 you know, we were basically collecting samples of
17 the influent every few hours. I think at the
18 beginning just two or three samples a day. And it
19 always had carbon tetrachloride and Freon and no
20 trichlorethylene whatsoever. Only once or twice it
21 showed up at maybe 5 or 10 PPB and so the lab
22 reported it. And the carbon, of course, had been
23 designed based on what we thought might come out.
24 And of course, once we knew what was coming out in
25 the first few days, we figured, okay, based on this

1 and based on isotherms that the vendors provided, we
2 should see breakthrough in about two or three months
3 and we should be fine. Of course, we did have extra
4 vessels there just to make sure in case we did have
5 breakthrough from the first vessel that wouldn't
6 emanate into the atmosphere.

7 Sure enough, within three weeks, we saw
8 breakthrough on the first vessel and that was kind
9 of surprising, because maybe -- maybe there was more
10 than what we thought. So we changed the carbon out,
11 and in the process of the disposal the vendor
12 actually analyzed the carbon and the carbon vendor
13 said, "Do you realize that you have almost 40
14 percent trichlorethene in your carbon?"

15 I said, "No, that's odd, because we didn't
16 have that in the vapors."

17 So anyway, we changed the carbon and
18 continued the test. It broke through again in about
19 four weeks this time. Again, there was very little
20 TCE in the extracted vapor. But when we analyzed
21 the carbon again, mostly I think it was TCE. That
22 kind of pointed to the fact that there must have
23 been a slug of TCE that came in, and because of our
24 sampling, obviously we wouldn't want to collect
25 samples every hour because that would just make for

1 a tremendous amount of lab money. We used -- just
2 collected what was reasonable, maybe, you know three
3 or four hours and then later on we actually moved
4 it, you know, once every two or three days. So it's
5 very likely that a slug of TCE came in right, you
6 know, right when we were not sampling.

7 Now, of course, where that slug was, we
8 have no way of knowing. But, you know, to some
9 extent it validated the fact that not only do we
10 have our well right there, but, you know, even --
11 and if there are any slugs nearby it is, indeed,
12 coming in, basically.

13 So, you know, again, you have one line of
14 evidence. But you cannot always have two lines of
15 evidence while doing a pilot test, because if you
16 wanted a second line of evidence, then every six
17 months you would have to go and poke a hole and
18 collect samples, you know, 50- or \$60,000 a hole
19 you'll
20 have -- you know, you will have basically spent all
21 the money in having the second line of evidence when
22 you can make do with the first line of evidence.
23 It's not incorrect. It's just one line of evidence,
24 and that's fine.

25 BURIL: I think the key here to recognize is

1 that the proof is, as the old saying goes, the proof
2 is the pudding. We are getting high amounts of VOC
3 out of the ground using this approach. And I think
4 that's the critical factor that everyone needs to
5 consider, is while we like to discuss whether or not
6 we need second lines of evidence or whether the VOC
7 characterization is complete or whatever questions
8 you might want to bring to bear on the issue, the
9 fact is that the system works. The entire idea
10 appears to be quite, quite practical for the
11 application here at JPL. And as such, I think it's
12 a question of just an optimization --

13 HOSANGADI: Right.

14 BURIL: -- of what it is that we already know,
15 and on the basis of that move forward.

16 HOSANGADI: You know, regardless of the fact
17 that, okay, maybe the vacuums that we were seeing 5-
18 and 600 feet away are not believable, maybe even the
19 ones that are 400 feet away are not believable. If
20 you do not believe those vacuums, that's fine. We
21 are, in fact, recommending that we don't even look
22 at radius of vacuum influence as a means of figuring
23 out how to space your wells.

24 What we were saying, and this was one of
25 the main reasons why we did the long-term test, was

1 let's see how much the VOCs reduce the soil gas as a
2 result of your testing. Because after all, we can
3 say that radius of influence is 10,000 feet. But if
4 you are not seeing any reduction in VOCs there,
5 what's the point of doing SVE? The point of doing
6 SVE is not to show your air flow there. It is to
7 remediate at a distance away from the well. And we
8 saw routinely, you know, 400, 500 feet away we were
9 seeing 90 to even 95 percent reduction in VOCs. And
10 that to us is proof that, indeed, we are seeing an
11 effect.

12 Now, granted, if you were to leave that
13 system off and measure the rebound, you might have
14 some rebound. But that's not the issue. All we are
15 saying is we have already seen the change 400 feet
16 away. The fact that you are rebounding only means
17 that we have not pulled long enough. And again, the
18 fact that, you know, you see a radius of remediation
19 influence of 400 feet by no means are we saying
20 that, "Well, let's place the wells 800 feet apart."
21 I mean, as a design engineer if someone were to tell
22 me, "Well, your radius of remediation influence is
23 400 feet and here are all the caveats and this is
24 how the site was," I as an engineer would say,
25 "Well, to be on the safe side, I might place my

1 wells at, you know, maybe 500 feet apart." So
2 that's equivalent to an effective radius of
3 remediation influence around 300 feet or so.

4 So looking at all the comments, we got the
5 sense that, you know, there was, you know, almost
6 disbelief at the high numbers. And as we get into
7 those specific comments I can --

8 BURIL: There was absolute skepticism on my
9 part.

10 HOSANGADI: Right. As we go into the other
11 comments, I'll explain to you why some of that
12 disbelief may be unfounded, actually.

13 MUELLER: I think the intent of this and other
14 comments is basically to say that if you want to
15 place more, or if you are going to place more
16 extraction wells, you should look near known source
17 areas. That was one point --

18 HOSANGADI: I would --

19 MUELLER: -- which you already mentioned.

20 And the second point that this comment was
21 pointing out was select well spacing sufficiently
22 close, actually, to capture all of the VOCs so that
23 the VOCs don't have a long travel time to the actual
24 extraction well.

25 And, thirdly, the shuttle's criteria

1 should not only be based on the fact that there is
2 an asymptotic level in one well because it could
3 mean that this well is just not properly located in
4 the center of VOC contamination.

5 HOSANGADI: Okay.

6 Mueller: Those three points that were sort of
7 summarized in the very first comment.

8 HOSANGADI: Right. Now, as far as that goes,
9 your first point was we should locate the wells near
10 the source areas.

11 And like I mentioned earlier, if you don't
12 have VOCs in the source areas, I don't see any point
13 in locating a well there just because 25 years ago
14 there was some disposal at that location. You would
15 obviously want to place your wells where there are
16 VOCs. So that's -- also keep in mind that this was
17 just --

18 MUELLER: (UNINTELLIGIBLE) water contamination
19 in that area also, so maybe your wells that you had
20 looked at before were not right right there where
21 the most -- the main plume of the VOC gas was
22 located. Because you have water contamination in
23 the same area.

24 HOSANGADI: Right. But, you know, the SVE well
25 is basically placed to take care of VOCs in the soil

1 vapor, not in the groundwater. And we actually
2 placed the well right in the center of where the
3 highest soil vapor VOCs were. And this is just one
4 well. We're not -- I'm not implying by any means
5 that all the future wells are going to be right
6 there. Obviously the future wells will have to be
7 place with respect to where the contamination is.
8 And, of course, it will have to be placed in a
9 fashion that we are, indeed, able to capture all of
10 the VOCs. So, you know, I'm not denying the fact
11 that we would have to have the wells there to
12 capture the VOCs. I'm just wondering if it makes
13 sense to put the well where we think the source
14 might be when actual RI data indicate that the
15 source might be elsewhere or not necessarily the
16 soils, but the high VOC concentration might be
17 elsewhere.

18 MUELLER: Right.

19 RIPPERDA: This is not worth arguing about.

20 BURIL: I don't think it is either.

21 RIPPERDA: But the basic point is, you know the
22 data much better than we do. So when you do your
23 design, just do a really careful job of presenting
24 all the data from all the RI work.

25 HOSANGADI: Right. Absolutely.

1 RIPPERDA: And to make it clear why you picked
2 where your wells went, you know, justify that, and
3 justify where you're putting your new wells. And if
4 we look at that and say "We don't agree with your
5 data," or "May this well -- " we just don't believe
6 the results from this well so we think maybe that
7 well was poorly installed or it's sucking from too
8 shallow or something like that, we might then ask
9 for an additional boring or an additional extraction
10 well, you know, two or three, from what you propose.
11 That's the whole point.

12 HOSANGADI: Right. And, in fact, even when
13 putting the future wells, it may, indeed, be better
14 to actually do it in a phased approach, where we
15 figure out this is the first part where we need to
16 get a well, put the well in there, run it for a
17 while, make sure that you are seeing the same levels
18 that we saw in well number 1, look at all the soil
19 vapor probes again, and then, you know, keep moving
20 out until we cover everything. You don't know.
21 Maybe a second well may be all we need because the
22 concentrations may be, indeed, low. Because that
23 should not be ignored either. The concentrations
24 are, indeed, borderline at the moment at a lot of
25 locations.

1 BURIL: Why don't we move on to comment 2, then,
2 with regard to the SVE comments. I think we've made
3 our point on item 1.

4 Here the question comes up as far as the
5 verification of the conceptual model and the
6 appropriateness of the SVE system and the evidence
7 that the shutdown criteria be protective of the
8 environment.

9 I don't know that there was ever really an
10 intent in Appendix C to try to verify the
11 appropriateness of the design, the appropriateness
12 of the site conceptual model or to do anything other
13 than discuss in general terms the shutdown criteria.
14 But if we're going to be removing Appendix C, I
15 think this comment all but goes away.

16 RIPPERDA: Right. Your FS -- you know, it
17 happens a lot where you kind of go halfway towards a
18 goal, but not all the way.

19 BURIL: Right.

20 RIPPERDA: So you don't do a good job of
21 completing your goal, but you've raised enough
22 questions by trying. So by removing it from the FS,
23 that's good. And in your design document, we
24 just -- one of the problems with Appendix C was that
25 it didn't focus on a lot of the stuff that you have

1 actually been talking about of looking at impacts to
2 groundwater.

3 HOSANGADI: It's implied, though, because the
4 Water Board basically has come up with this criteria
5 protective of the groundwater and by following that
6 criteria, we are therefore then being protective.
7 So I didn't try to reinvent the wheel as far as --

8 RIPPERDA: Right. Okay.

9 HOSANGADI: -- protection of groundwater.

10 BURIL: Regardless of that, I think by removing
11 Appendix C we've removed the issues identified --

12 RIPPERDA: Right.

13 BURIL: -- here and we needn't spend any more
14 time on it.

15 Okay. Number 3, then.

16 HOSANGADI: Number 3, actually --

17 BURIL: I think we found a typo that covers
18 this.

19 HOSANGADI: Right. It should have actually said
20 "three weeks." The calculations in Appendix C were
21 actually correct. We came up with somewhere around
22 22 to 25 days. And the "porosity" should actually
23 be the "effective porosity." So we'll basically
24 make that change on that page.

25 The last paragraph in that column, though,

1 the issue of the surface air leakage rate is one
2 thing that I want to find out why there was a
3 concern, because basically, you know, at almost any
4 given SVE site the air that comes into your well is
5 almost always from the atmosphere. So, you know,
6 the issue of surface and leakage rate, to me, is not
7 a parameter that you would change your design based
8 on. Because the effect of air surface or surface
9 air leakage rate is taken inherently into account
10 when we analyze the data. That was one question.

11 The other -- the question I was wondering
12 about was it says that the surface air leakage rate
13 through the 125,000 square feet of surface air and
14 the 400 foot radius around the SVE well, and I was
15 wondering what that 125,000 square feet was, because
16 the area of a 400 foot radius circle we found it in
17 2,400 square feet.

18 RIPPERDA: If that was a math error, we
19 apologize.

20 HOSANGADI: I was wondering if there was
21 something else. But nonetheless, the question of
22 the surface air leakage remains, because, you know,
23 I have not seen, and I've been in numerous sites
24 where SVE was used, I've not really seen where
25 surface air leakage is a primary design parameter,

1 something that is taken into account. I mean the
2 fact that you see responses X feet away, you are
3 taking that into account because the air flow rate
4 always is from the atmosphere going towards the
5 well.

6 BURIL: Could I ask a question of Heike for just
7 a moment?

8 Heike, are you concerned with air leakage
9 as a function of leakage in the immediate area of
10 the well which may be short circuiting its ability
11 to have an effective radius of influence?

12 MUELLER: It had to do with short circuiting,
13 yes.

14 HOSANGADI: Okay.

15 MUELLER: (UNINTELLIGIBLE) the estimated. And
16 it may or may not be an important design parameter,
17 but it does help you with the design in some ways
18 because you can estimate whether it is going to be a
19 problem or whether it's not going to be a problem.

20 HOSANGADI: Not true. Because, you know, so
21 what if you know your surface air leakage rate from
22 a 400 foot radius. How are you going to find out
23 whether the air that entered your well was, indeed,
24 from there or not unless you do some pretty
25 extensive, you know, tracer test studies, which you

1 can spend a lot of money doing that, but the data is
2 still not necessarily, you know, supportable because
3 you would have to use multiple tracers, you would
4 have to use multiple trace of injection points.
5 And, you know, you would have to have a monitoring
6 program that you monitor it every minute, basically.
7 If you miss one tracer, it might completely knock
8 your data out.

9 You know, so that's why I don't know if
10 the -- you know, the surface air leakage, because if
11 you can be sure of what the actual rate is, then,
12 yes, you could use it in the design. But if you
13 cannot be sure of the leakage rate to begin with,
14 what's the point in considering it for a design?

15 MUELLER: You have in your pilot test -- you
16 have a figure in here that shows that I think --
17 from extraction from screen A you have a very linear
18 relationship which in some ways (UNINTELLIGIBLE)
19 would point towards to some sort of
20 short-circuiting. Maybe it's from the surface.
21 Maybe it's not. And that was pointed -- this
22 comment was in relation to that finding from the
23 pilot test.

24 HOSANGADI: Yeah. And when we get to that
25 comment, I can respond to that as well.

1 But, you know, that response is not
2 necessarily linear. Actually, if you look pretty
3 closely, it does follow a slight curve. And, you
4 know, the other fact also remains is that to some
5 extent we were limited by the size of the blower,
6 which as you will notice, that the Y coordinate for
7 all of those three curves is almost the same. The
8 fact it is linear, you know, yes, there may be some
9 surfeiting, but remember, that screen is pretty
10 shallow compared to the other wells. The fact that
11 when we were pulling from screens B and C, we did
12 not -- we see almost -- we saw almost no response in
13 wells of a screen, you know, around extraction well
14 A would indicate to me that there was not that much
15 short circuiting to begin with.

16 And also, you know, to some extent it's
17 related to your comment about the fact that flow to
18 any well is always within the tens of feet away from
19 the well. Again, that's not true. It may be true
20 at a site where the water table is 50 or 60 feet.
21 Yes, you might have flow from just, you know, 10,
22 20, 30 feet away. But remember, here you are
23 talking about a site that is, you know, groundwater
24 table is 200 feet deep. Plus we took the precaution
25 of having three separate screens. That way we

1 can -- you know, if you were to have just a single
2 screen, yes, there would be the fear. Because the
3 vacuum at the top of the screen as you go down might
4 be 15 inches of water. The vacuum at the bottom
5 might be zero because all your vacuum has dissipated
6 in the first 20 feet of screen.

7 But the fact that we have three screens
8 with some, you know, reasonable seal in between
9 them, we were to some extent ensuring that for the
10 second well at the top we again have 50 inches of
11 water. And then for the third well again at the
12 beginning of the screen we again have 50 inches of
13 water. So our flow lines are going to be, you know,
14 drastically different as compared to just having a
15 single well, basically.

16 MUELLER: If you're not as concerned about
17 what's in the vadose zone around screen A, if you do
18 have to address what (UNINTELLIGIBLE) in terms of
19 VOC in that screen you still would have to have some
20 impact on them. You have to have some way of
21 addressing and pulling air from screen A eventually,
22 because --

23 HOSANGADI: Absolutely. But there is not that
24 much VOC contamination around screen A. Also, keep
25 in mind that, you know, the screens, you know, the

1 zones that we mentioned, 1, 2, 3 and 4 and screens
2 A, B and C are not based whatsoever on geology. We
3 literally looked at how much VOCs were there and we
4 found that they were mostly in, you know, in the --
5 there was not that much VOC in the first 80 feet.
6 So we, for safety, assumed that we would take care
7 of 150 feet and we split that up almost equally into
8 three separate screens, basically. So, you know,
9 extraction from zone A -- from screen A may or may
10 not be necessary for the full-scale remediation.

11 And also, like I mentioned earlier, your
12 cleanup goals at height above water table are far
13 less stringent. I mean, if you have a cleanup level
14 of 5 microgram per liter at the water table your
15 cleanup level around screen A might be 100. If you
16 started off with 50, what's the point in --
17 (UNINTELLIGIBLE) that's something that relates to --
18 we'll have to relate back to where the VOCs are.
19 When the next set of wells are put in we have to see
20 where the VOCs are, basically.

21 BURIL: Could I make a suggestion here. Rather
22 than going through each one of the comments, because
23 I think that there is obviously some technical
24 differences in approach here. Rather than doing
25 that, perhaps we ought to focus on the questions

1 that you have, Vitthal, to be able to have those
2 resolved and hopefully we can get that resolved a
3 little more quickly. And then in whatever response
4 that we put forward we can put together a technical
5 explanation as to why certain of these things that
6 are being brought up may or may not be a real
7 concern for the site.

8 MUELLER: I think that's a good idea.

9 HOSANGADI: So should I ask the questions, then?

10 BURIL: Yes. What questions you have
11 specifically on the comments that you don't
12 understand.

13 ROBLES: So you can express the concerns, to
14 EPA.

15 HOSANGADI: Going to comment number 14,
16 basically. The very first one is what is IC 41? Is
17 that just something related for some other comment,
18 the very first sentence in comment number 14. It
19 says the ROI for (UNINTELLIGIBLE) is estimated to be
20 three times three based upon soil vapor extraction
21 conducted at IC 41.

22 RIPPERDA: I don't know. Either that was a typo
23 by me when I was taking Heike's comments or Heike
24 got it from somewhere. So I don't know.

25 Do you know what that is, Heike?

1 MUELLER: It's from the pilot test, I'm sure.
2 I'm not familiar with all of the names.

3 BURIL: We didn't have nomenclature that went
4 that far, did we? It went to 38, I thought.

5 MUELLER: SC 41.

6 ROBLES: Could you research it and get back with
7 us?

8 MUELLER: I can check on the original. I can
9 check on my original (UNINTELLIGIBLE).

10 ROBLES: Right. Could you check on it?

11 BURIL: Heike, if you would just give me a call
12 and let me know. Or just drop me an e-mail would be
13 even better, letting us know the origin of that
14 particular nomenclature and where you got it from.
15 That would be the ideal.

16 MUELLER: Okay.

17 HOSANGADI: Moving along in that same paragraph,
18 the statement about EPA statistics on 12 systems
19 back in '90, '91, what were the depths to
20 groundwater on those? Because, you know, it's not
21 just soil type that comes into play. Like I
22 mentioned earlier, if you have only 10 feet of
23 vadose zone, your radius of influence might be 30
24 feet, whereas if you had 200 feet you might have
25 200, 300 or 400 feet.

1 So are we sure that those -- you know, the
2 data that they got from those 12 sites even
3 applicable at JPL? Because if it's not, then
4 there's no point in saying that, you know, 12 sites
5 were studied in '91 and they all showed 100 feet.
6 The conditions may have been different.

7 BURIL: I think the key here is that we'd just
8 like to have more information regarding the sites
9 that were evaluated in this particular 1991 study
10 that you reference. If it's very similar geology
11 and lithology as JPL, fine, that's something we
12 should take into account. If it's something
13 radically different in terms of the thickness of the
14 vadose zone or thickness of various types of
15 geologic units, then it may not have a lot of
16 applicability. We just need to be able to make that
17 comparison.

18 MUELLER: Yeah, I have a list of references
19 too.

20 HOSANGADI: That would also help, because there
21 are a few references in there.

22 MUELLER: Exact reference (UNINTELLIGIBLE).

23 RIPPERDA: And on a specific question like this,
24 rather than just giving them the reference title, if
25 you could fax them the relevant pages from that.

1 BURIL: That would be ideal.

2 RIPPERDA: That would be the best.

3 BURIL: Let me give you my fax number right now,
4 Heike, so you have it. It's area code 818.

5 MUELLER: 818.

6 BURIL: 354.

7 MUELLER: 354.

8 BURIL: 3558. And if they're too numerous, by
9 all means just send it to us. That works as well.

10 MUELLER: Who was that just now talking?

11 BURIL: This is Chuck Buril of JPL.

12 MUELLER: (UNINTELLIGIBLE) radius of influence
13 is always based on the screened intervals, all the
14 extraction wells. So I'll look that up.

15 HOSANGADI: Yeah. That would help.

16 The second paragraph, you know, about the
17 low vacuums and so on, the comment is, indeed,
18 valid. And in fact, not only do barometric
19 pressures affect the vacuum readings, it's also the
20 natural movement of air in the subsurface. So just
21 to take barometric pressure into account would by no
22 means make sure that the data is absolutely
23 foolproof. And taking into account both the
24 barometric changes and the subsurface changes is
25 somewhat difficult.

1 What we did instead was, because we had
2 the luxury of running the test for a longer time, we
3 closely observed the rise and fall in vacuum
4 responses in monitoring points that go, you know,
5 away from the well. And we distinctly noticed, and
6 you can see in long-term, you know, testing and also
7 in portions of test 2 that wells that were, you
8 know, 500, 600 feet away, while the magnitude of
9 responses may have been small, within a few hours of
10 starting the vapor extraction blower we saw that the
11 vacuums increased to a level of, say, maybe half an
12 inch or an inch of water.

13 We kept the system running for a while.
14 The vacuums were right around that level. We shut
15 the system off and, sure enough, within less than 24
16 hours, the vacuums dropped back to zero. Now, that,
17 to me, implies that, you know, that we are, indeed,
18 seeing an effect of vacuum extraction at that
19 distance. Granted that distance may be a lot, but
20 nonetheless, you know, we cannot discount the
21 response based on the distance.

22 And also, when you look at it in terms of
23 depth to water table away from the extraction well,
24 400 feet is just two depths to water table away. So
25 it's not really -- you know, in the big picture,

1 it's not really that far away, basically. And
2 furthermore, as you notice, we moved away from ROVI
3 as any indication of where we are seeing remediation
4 because we actually went and looked to see where the
5 VOCs are reducing. So the effort involved in trying
6 to come up with a perfect estimate of ROVI is not
7 really worth it because you're not going to use that
8 number anyways. Rather, we are choosing to go with
9 what would be a more appropriate number, which is
10 the distance at which we are seeing a significant
11 reduction in VOC levels.

12 BURIL: Your question was?

13 HOSANGADI: What are your concerns as far as the
14 low levels of responses in light of what I just
15 said?

16 MUELLER: The fact that we had seen some
17 responses in wells that were further away that are
18 higher than in wells that were closer to the
19 extraction well, that was just something that sticks
20 out and makes the whole evaluation more
21 questionable.

22 HOSANGADI: Not necessarily. Almost at any site
23 we are bound to see some aberration in terms of
24 responses. And just the fact that a single response
25 was higher than it should have been by no means

1 indicates that the rest of the data is incorrect.

2 CUTLER: It's certainly not homogeneous out
3 there.

4 BURIL: I think that's going to be part of what
5 we address in our response.

6 MUELLER: Right.

7 BURIL: Any other questions per se for
8 clarification, Vitthal?

9 HOSANGADI: Yes. As far as the item number 15,
10 I'm just reading it from what was in there. It says
11 "Reportedly, many hundreds, if not thousands of air
12 pore volumes are necessary to remediate a typical
13 VOC spill."

14 Now, you know, the number of pore volumes
15 is a hotly contested topic, and I've heard people
16 say 100. I've heard people say 10,000. These VOC
17 spills that were reported in the paper, were they
18 actually chlorinated VOCs, or were they gasoline?
19 Because for a gasoline site, yes, you may need
20 thousands of pore volumes because in the first few
21 hundred pore volumes you might get all the benzene
22 out and you leave maybe a few more hundred pore
23 volumes you get the toluene and xylenes out and you
24 might need a few thousand later on. So
25 unfortunately, that led back to the fact that, say,

1 for example, if you need three weeks to take out one
2 pore volume, we have probably taken out maybe 30 or
3 40 pore volumes in the pilot test so far. How,
4 then, do we correlate the fact that we have actually
5 seen a 90 percent reduction in VOCs with the
6 statement that you might need thousands of pore
7 volumes coming out?

8 MUELLER: I would check one of their chlorinated
9 VOCs in that paper or gasoline compound.

10 HOSANGADI: And also the site geology. Yes, if
11 you have a lot of clays and silts, absolutely. It
12 might take you -- you might do it for 10,000 pore
13 volume and still not get removal. However, if you
14 have sands and you don't have much clay, which
15 incidentally happens to be the case at JPL, you
16 might need only 100 pore volumes. So, you know, I
17 don't know if necessarily looking at those numbers
18 is the -- you know, is the end of it. You know, we
19 really have to see whether the VOC levels decrease
20 or not. And yes, actually, they did. So, you know,
21 the number of pore volumes really has -- doesn't
22 have that much of an impact on looking at whether
23 the thing is effective or not.

24 RIPPERDA: You know, we're not trying to argue
25 about this one reference and does it take 100 or

1 does it take 10,000. But a concern with a very
2 large radius of influence is that it takes a very
3 long time --

4 HOSANGADI: Absolutely.

5 RIPPERDA: -- for gas from 400 feet --

6 HOSANGADI: It has to. Yes.

7 RIPPERDA: -- to move in. So don't just say,
8 oh, we have a 400-foot radius of influence, so we're
9 going to use a large well spacing.

10 HOSANGADI: And we did not. For the purpose of
11 costing we assumed five wells. The actual number of
12 wells might be two. It might be 20, for all we
13 know.

14 RIPPERDA: Okay. The point of many of these
15 kind of comments is just --

16 ROBLES: To think about it.

17 RIPPERDA: It's not necessarily that we don't
18 believe the 400-foot spacing. It's just that, you
19 know, the time line --

20 HOSANGADI: Absolutely.

21 RIPPERDA: -- that's created from the
22 remediation system is moving on with that. So we'll
23 move on from that.

24 BURIL: That sounds good.

25 Do you have any questions, Vitthal?

1 HOSANGADI: That was pretty much it so far.

2 BURIL: Okay. Heike, if you could help us out
3 and generate that information that we've identified,
4 and we can put the responses together, as Peter has
5 indicated. And we can go from there. I think this
6 will all probably be something that gets dealt with
7 in large part at the point in time the design
8 actually takes place as opposed to anything that
9 needs happening in the immediate future. I don't
10 know if anyone else agrees with that approach.

11 RIPPERDA: The whole point of this fat amount of
12 comments was just some general questions or concerns
13 that we have when you do the design document.

14 BURIL: Sure.

15 RIPPERDA: So you can generate a letter response
16 to this. That would be fine. But mostly --

17 BURIL: Would it be more appropriate, Mark, that
18 perhaps during the course of the design development
19 itself that we take these things into account and,
20 in fact, address them in the design document such
21 that it's not necessarily an exact response?

22 RIPPERDA: That was going to be my second
23 option, which was more my point when I wrote this,
24 that this is stuff we're going to be looking for in
25 the design, not that you specifically respond point

1 by point to this, but that when we read the design
2 document we are asking --

3 BURIL: It addresses these issues so that you
4 don't have to have it readdressed again.

5 RIPPERDA: Right.

6 ROBLES: That's a good point.

7 BURIL: That way we'll write another response
8 and we can just simply incorporate it into the
9 design document. I think that would probably work
10 out a little better.

11 ROBLES: Okay. Why don't we move on, then, to
12 the EPA comments on potential on-site contamination
13 source areas which we have on our agenda. That was
14 the second letter.

15 RIPPERDA: That was more specifically the one
16 related directly to the FS. And I wasn't reading
17 the agenda carefully, and so we already talked about
18 that.

19 ROBLES: Oh, okay.

20 RIPPERDA: I wanted to talk about that first
21 before we moved into the SVE stuff. I've screwed up
22 your agenda. I apologize.

23 ROBLES: Don't worry. This is only a template.
24 So we have addressed the concerns.

25 Do we need to do anything more

1 specifically on that potential on-site?

2 RIPPERDA: No.

3 But on the SVE design, what's a timetable
4 for getting the initial design document out?

5 Well, I guess we need a ROD first.

6 So what's the whole soils schedule?

7 GEBERT: The proposed plan is due about two
8 months, I think. Right, Richard?

9 ZUROMSKI: I believe so, at this point.

10 RIPPERDA: So we're like on track for the
11 spreadsheet that you have going?

12 ZUROMSKI: Yeah. Actually, the reason Mark Good
13 from the Navy, who you met last time, who is doing
14 our contracts work, isn't here today because he's
15 working on our contracts issues. I think on this
16 Wednesday coming up, the 13th, a contractor is
17 coming out here. And I think I talked with folks
18 from Foster Wheeler, and Chuck has a question before
19 I continue.

20 BURIL: The schedule that you handed out
21 earlier, Richard, did that go to the issue of SVE
22 design construction?

23 ZUROMSKI: Yes.

24 BURIL: It did. Okay. But, then, as far as a
25 proposed plan actually coming out, is that still

1 within the same time frame as the original schedule
2 identified?

3 ZUROMSKI: I'm not sure.

4 GEBERT: I have a copy of the --

5 ZUROMSKI: Richard has a copy.

6 GEBERT: I know the schedule.

7 ZUROMSKI: I could get it. It's in my office,
8 but --

9 GEBERT: Okay. The OU-2 proposed plan is due, I
10 guess it's to us, it says "Finish, January 12,
11 2001."

12 ZUROMSKI: Yeah. I think the -- at least the --
13 do we have a draft on there too, or just the final
14 on there?

15 GEBERT: The start date is September 11th.

16 ZUROMSKI: Okay.

17 GEBERT: Which is next week. And then I guess
18 it's due to us --

19 ZUROMSKI: I'm not sure if that was the draft or
20 the final, but I'm sure --

21 GEBERT: That's probably the final, because the
22 public comment is going to start Jan 15th. So it
23 has to be the final.

24 ZUROMSKI: We're actually, like I was saying
25 previously, we have a contractor coming out here on

1 Wednesday to do a site visit of the site, look at
2 the SVE pilot system, gather some data from Foster
3 Wheeler because they're probably going to be
4 doing -- either taking over just the pilot system to
5 continue the pilot test while we're waiting for the
6 actual remedial design and the true remedial action
7 and whether or not they're actually going to do the
8 proposed plan or another one, another contractor is
9 going to do that, we haven't decided. But we're
10 going to be trying to figure that out on Wednesday
11 of this week. And so that looks like -- I mean,
12 we're still shooting for all the dates that are on
13 there. So, sounds good at this point.

14 GEBERT: Okay. So we can expect a proposed plan
15 in like a month? The first draft, about a month?

16 RIPPERDA: So we'll be getting our review draft
17 in like late October?

18 ZUROMSKI: I would say late October, you know.
19 I think we're going to have our awards done all by
20 the end of this month. And so they would be working
21 on that right away. That's the first priority I
22 think on the OU-2 right now besides continuing, of
23 course, the work that Foster Wheeler has done. And
24 the pilot test is another concern as well that
25 they're working on.

1 I'll talk about the other contracting
2 issues later on. So we'll just keep going on OU-2
3 if you guys have any other questions.

4 RIPPERDA: One more thing on OU-2 that didn't
5 come up at all here, but it's in the comments. And
6 that's I want to piggyback. I want to make -- you
7 know, I want to see if this is reasonable with you
8 guys or not. A perchlorate soil sample. I want to
9 get some soil samples for perchlorate out of the SVE
10 construction.

11 ZUROMSKI: Yeah.

12 BURIL: Let me ask a question, though, in that
13 regard just because of the conversation that we were
14 having earlier with regard to having a well placed
15 at a location where there was a known source as
16 opposed to where there was actual VOCs. We may be
17 in a similar situation, but on the other side of the
18 coin, with perchlorate because you may not find
19 perchlorate unless you do put it right where the
20 source was because there is no mechanism save
21 dissolving in water and moving water through the
22 vadose zone that would cause perchlorate to migrate
23 as opposed to VOCs, where you have a mechanism.

24 RIPPERDA: Right. VOC -- he was talking about
25 actual liquid slugs, possibly, of TCE. You know,

1 liquid moves under gravity and impeded by various
2 layers. You know, VOCs are going to behave a little
3 differently because their capillary pressure forces
4 and surface tension and stuff like that. But still,
5 liquid moves down.

6 BURIL: My point being you're too far away from
7 a point where it was induced into the environment.
8 Unless we have significant layering that would cause
9 that to move laterally across a confining layer, we
10 may not see it unless we're right on top of that.

11 RIPPERDA: Right. So my point is that
12 perchlorate is going to move more or less like your
13 VOCs. There's going to be some differences, but,
14 you know, first assumption is wherever your liquid
15 VOCs moved is where the water containing the
16 perchlorate also moved. So if you have an area with
17 really high known VOCs in soil, you would guess that
18 that might be the percolation pathway or the
19 introduction and migration pathway. That's one
20 assumption.

21 The other assumption is, yeah, it moves
22 straight down from the point of introduction. So I
23 would think that --

24 BURIL: You may have a two-pronged approach.

25 RIPPERDA: -- that I would want two bore holes,

1 one that goes to where your soil vapor data shows
2 this is where the most concentrated soil VOCs are,
3 saying, well, that might be one way the liquid went.
4 And another would be go do your most probable source
5 area or a source area and go right near it and
6 straight down.

7 ROBLES: Your intent, Mark, is to find out where
8 the sources are for the soil?

9 RIPPERDA: No. My intent is to, for long-term
10 design of the groundwater, to know is there still a
11 load of perchlorate waiting to be introduced into
12 the groundwater. Is the perchlorate all more or
13 less in the groundwater already? Just so we have an
14 idea are you going to be running your perchlorate
15 capture system for 20 years or, you know, 100 years.

16 BURIL: That makes sense.

17 RIPPERDA: I know it doesn't rain a lot here and
18 you don't have your storm drains and your cesspools
19 you know, introducing water in the vadose zone in
20 nearly the quantities that it was originally. So
21 there may be perchlorate, a lot of perchlorate in
22 the vadose zone, but maybe it's not really being
23 transported down anymore. But I still just kind of
24 want to know how much perchlorate is sitting
25 underneath JPL.

1 So anyway, it's not going to be -- I don't
2 want an extensive RI type investigation of
3 perchlorate in soils, but I want to look at two or
4 three locations where you think it's most likely to
5 have perchlorate and just get kind of a vertical
6 profile.

7 BURIL: When you talk about analyzing for
8 perchlorate in soil, is there a specific approved or
9 recognized method that you would prefer that we use?

10 GEBERT: Yes, there is.

11 RIPPERDA: Yes. I don't know the number right
12 now, but I asked Kevin Mayer, our perchlorate guy at
13 EPA. And he says that there is.

14 GEBERT: I can get you a copy of that.

15 BURIL: Is it the modified 300 one that they've
16 been talking about?

17 RIPPERDA: I don't know the number, but there
18 is.

19 GEBERT: There is. Do you want a copy of it?

20 BURIL: I think it would be useful just to have
21 the information and method number and what its basic
22 thought is, because I'm sure we can find labs that
23 are more than willing to perform the test. Is there
24 any kind of a certification that you're aware of,
25 Richard --

1 ZUROMSKI: I'd like to see that.

2 BURIL: -- through DTSC's lab program that
3 certifies labs for that particular analysis? I know
4 that they have it for liquid contained perchlorate.

5 GEBERT: I'm sure. Probably is. I'll check on
6 that.

7 BURIL: If you could. That way at least we can
8 kind of keep the same QA/QC approach that we've used
9 all along.

10 GEBERT: I agree with Mark. You need some data.
11 There is a big data gap there as far as perchlorate.
12 We don't have any data at all, if there's any
13 different layers in the soil.

14 BURIL: Do you know what the detection limit is
15 of that method off the top of your head?

16 GEBERT: In the soil? No.

17 RIPPERDA: I don't know that either, but I know
18 that it's a perfectly reasonable low detection
19 limit.

20 BURIL: It's not like 400 or 4,000 or something
21 like that?

22 RIPPERDA: Right.

23 ZUROMSKI: Like 40 or something. 40 or 100.

24 BURIL: 40 would be okay.

25 ZUROMSKI: I think maybe I saw when I was up in

1 a conference up in San Francisco an EPA
2 representative was talking about doing soil sampling
3 for perchlorate and they presented a method. But I
4 don't know the answers to the questions that Chuck
5 is asking, so --

6 RIPPERDA: Nobody is cleaning perchlorate in
7 soils currently. You know, the only way -- and
8 that's even at places with shallow, like out in the
9 Las Vegas Wash where the perchlorates may be down to
10 40 feet. So if you do find large quantities of
11 perchlorate at 150 feet, it's not like we're going
12 to ask you to wash millions of gallons of water into
13 the subsurface here to try to flush it out. It's
14 more just we want to know.

15 HOSANGADI: Unless, of course, you put a
16 reinjection well right there or something.

17 RIPPERDA: Right. That's a good point.

18 ROBLES: Okay. Any more on the OU-2 feasibility
19 study?

20 RIPPERDA: No. I don't have any more.

21 ROBLES: Anybody else?

22 Why don't we go to item 3, Statute AB
23 2646.

24 ZUROMSKI: I just wanted to give a quick status.
25 I don't know if you've been tracking it or not. But

1 I have got the latest e-mail that they -- you can
2 set up on your server to automatically send you
3 every time they have legislative action on a certain
4 bill. And I believe, at least in -- it's passed
5 through the committee and it's been amended
6 significantly and should be or is, already has been
7 voted on in the Assembly, so --

8 BURIL: And the outcome of the vote was?

9 ZUROMSKI: It was favorable through the
10 committee to the Assembly.

11 And then there was another one which is
12 actually pretty cryptic when they send you through
13 e-mail. And there was a 40 to zero vote for this
14 amended significantly AB 2646, but I'm not sure if
15 that was the final vote or if that was just another
16 committee vote or not.

17 BURIL: Could you do me a favor and send me the
18 e-mail address for that?

19 ZUROMSKI: I would love to.

20 BURIL: I've been trying to follow that.

21 GEBERT: Are the amendments or changes more
22 stringent or less?

23 ZUROMSKI: Less stringent. It's been chopped up
24 significantly.

25 HOWELL: They changed the date that they would

1 grandfather in any existing systems from January
2 1st, 2001 to whenever the legislation was passed.

3 ZUROMSKI: Right.

4 HOWELL: So it in one way is a significant
5 change in that it's a rather more restrictive
6 requirement in that it would be sua sponte, you got
7 to comply. Or if you want to look at it, if the
8 statute doesn't -- legislation doesn't pass, you got
9 more breathing room because it's not likely to be
10 passed by January 1, 2001 if it didn't make it
11 through August 30th of this year. So that's why
12 this vote that Richard is talking about is
13 important.

14 BURIL: Do know if the Legislature is going to
15 be meeting again to vote on this between now and the
16 end of the session? No, we don't know or --

17 ZUROMSKI: I don't know. I don't know. So --

18 BURIL: Let me share with you a conversation I
19 had with Bob Hayward from Lincoln Avenue, one which
20 was somewhat revealing in that regard.

21 According to his contacts in the water
22 purveyor industry, they expect 2646 to go through
23 before the end of this legislative session. And
24 they're preparing for it. That's purveyors in
25 general, according to him.

1 He has also said that there are moves
2 afoot to reduce the MCLs for some of our target
3 contaminants, most notably TCE, from 5 to .5. So
4 anecdotal information, but important nonetheless.

5 HOWELL: We will continue monitoring this. It
6 still is a rather significant concern of ours.

7 ZUROMSKI: That's all I have on that.

8 ROBLES: Okay. Then we're going to item 4,
9 Groundwater Feasibility Study Update.

10 Impacts of the Southwest Arroyo Toad, our
11 endangered species.

12 BURIL: You're not supposed to be impacting
13 those, Peter. I told you to stop throwing them
14 against the wall.

15 ROBLES: Since the latest development, we're
16 going to have to basically look at that within our
17 impacts on basically OU-1 and -3. The Arroyo, the
18 Arroyo Seco, the whole Arroyo Seco from, I guess --
19 what's that canyon up there? Lost Canyon?

20 BURIL: Millard Canyon.

21 ROBLES: Millard Canyon all the way down through
22 to Devil's Gate Dam is considered one of the
23 critical habitat areas for them. Proposed.
24 Proposed. Excuse me. Got to get the right
25 terminology. It's proposed. And it's being looked

1 at and it will take a while for it to be, but it's
2 basically now that we have to deal with the
3 endangered species on all of our documentation. So
4 that will be one of the items that we'll have to
5 look at.

6 BURIL: Let me add just a little bit of
7 anecdotal information. Currently we don't see the
8 Southwest Arroyo Toad very often. In fact, it's
9 almost completely absent. However, I did personally
10 see these little critters all over the place in the
11 Arroyo back in about the '92-'93 time frame. In the
12 '93 winter, we had a flood in the Arroyo Seco that
13 went levy to levy, dam to origin, and it was huge
14 and stayed there for a good number of days.

15 I believe that something happened to the
16 toad subsequent to that little flood to the tune of
17 near extinction in the Arroyo Seco as a result,
18 because we haven't seen these little critters much
19 at all since.

20 So I don't know that we have an endangered
21 species issue in terms of having them physically
22 here within the program site, but certainly the
23 endangered habitat preservation issue is going to be
24 key.

25 HOWELL: And that's where, as a federal agency,

1 we have Section 7 responsibilities through an
2 executive order also to essentially treat the
3 habitat as though it has been listed, even though it
4 has not. It's only proposed. Once it's been
5 proposed, we have to act as though it has been
6 listed until the final ruling on that.

7 BURIL: And in so doing we actually treat it as
8 though the creature is physically there.

9 HOWELL: Yes.

10 ROBLES: It's never about the creature. It's
11 always about the habitat, because habitat is tied to
12 the creature. No habitat, no creature. So you
13 treat the habitat and that's the basic thing,
14 whether you see the animal or not.

15 HOWELL: It will be one of those things we'll be
16 monitoring in the meantime.

17 GEBERT: So it could affect your spreading basin
18 option.

19 ROBLES: Right.

20 BURIL: Absolutely.

21 HOWELL: It will have a variety of impacts with
22 regard to our remedial plans, you know, strategies.

23 CUTLER: The funny thing is if you had spreading
24 basins, it might help the toad, probably, in
25 reality.

1 HOWELL: We still have not had detailed
2 discussions with the Fish and Wildlife Service. We
3 obviously need to have discussions with them to find
4 out exactly what their plans are if this habitat is
5 being -- and what they're going to be needing from
6 us, if they're going to be needing a biological
7 assessment and biological opinion and in turn what
8 we're going to have to do as far as a site, not just
9 as a Superfund site, but as a federal facility,
10 because we'll need to look at the overall facility.
11 We would obviously try to get the most bang for our
12 buck and try to do everything at the same time.

13 RIPPERDA: With what Mark said, the various
14 offices of Fish and Wildlife that I have worked with
15 are always keen on anything that creates quality
16 habitat. If it's true that spreading basins are
17 actually beneficial, at other sites that I've worked
18 on Fish and Wildlife would be begging you to
19 incorporate spreading basins into your remedial
20 plan.

21 HOWELL: That is something that eventually I
22 think this group will need to talk about as far as
23 how we are integrating all the various requirements
24 that we have from the Endangered Species Act. It
25 obviously would be, and rightly so, an ARAR. So we

1 need to -- this group needs to help us address how
2 we're going to satisfy those requirements.

3 ROBLES: Getting into the issue of spreading
4 basin or reinjection, let me pull out just the site
5 item. We have started discussion with the City of
6 Pasadena about how to address the OU-3 remediation.
7 Because one of the things that we were looking at is
8 where will we be at sinking a well next to their
9 Arroyo Well and using that as a capture well and
10 then pumping it to someplace for treatment and then
11 deciding on whether do we need to spread it or do we
12 need to reinject it.

13 And the key is, the main driver for them,
14 for the City of Pasadena, is the Hahamongna project.
15 And one of the things that was suggested is that we
16 sink our well in the Arroyo. That's it right there.
17 Right? Okay. There's a Bainer site that they have
18 asked us to consider. That was a place for
19 treatment that we could pump all the water up there
20 and then treat it and then move it to the other
21 side. And they want the spreading basins to be
22 around here.

23 There's one problem, though.

24 BURIL: A little further south than that.

25 ROBLES: A little further south, like right

1 here?

2 BURIL: Right around where it says Ranger
3 Station.

4 ROBLES: Okay. Right about here. There's only
5 one problem. That also happens to be where the --
6 was it the Native American Friends of the Sage?

7 BURIL: Spirit of the Sage.

8 NOVELLY: Spirit of the Sage.

9 ROBLES: Spirit of the Sage folks get their
10 special native plants.

11 NOVELLY: Herbs.

12 ROBLES: Herbs and so on. So to put a spreading
13 basin there might be a conflict.

14 The toad presents another problem to
15 determine whether a spreading basin would be helpful
16 or not, and to determine even if that area is
17 possible for a spreading basin is going to be a big
18 issue. So we've got a major problem in that.

19 The other thing is we don't know if it
20 will work. That's one of the things that we're
21 looking at.

22 And the other thing is we're trying to tie
23 this in with the Hahamongna. Because of the
24 endangered species issue, I don't know if their
25 project is going to be able to get off the ground.

1 I think we're going to be way ahead of them.
2 Whatever we need to do for remediation for OU-3 will
3 be done before they even get this issue resolved.
4 Because of the endangered species, they're going to
5 have to include that in any plans and that takes a
6 long-time process. They're trying to get the Arroyo
7 Seco delisted from a proposed critical habitat. It
8 takes years. Because they know that if the Arroyo
9 Seco is made a critical habitat, their Hahamongna
10 project is dead in the water. So they've got some
11 major issues.

12 So we're trying to work with them to see
13 how we can do this. And it looks like the spreading
14 basin option is not as attractive and it's going to
15 take a long time for us to get it through their
16 system as opposed to putting our well in, pumping it
17 up to the Bainer site, putting what technology we
18 select, and then pumping it back to our site and
19 then reinjecting it so that we can control the
20 off-migration plume.

21 RIPPERDA: Along those lines, something I'd like
22 to see as soon as possible, and I don't know if it's
23 possible if you're changing in contracts, is just
24 modeling of how to optimize this. Like you don't
25 need to model to know you need to pump into the

1 Arroyo Well.

2 ROBLES: Right.

3 RIPPERDA: It's like common sense tells you
4 that.

5 ROBLES: Right. Right.

6 RIPPERDA: And your groundwater model better say
7 the same thing or your groundwater model is wrong.

8 But what's not so intuitively self-evident
9 is where it would be best to reintroduce it and
10 would it be good to have an additional well or two
11 somewhere else for capture, you know, either south
12 or west or like whatever. But, you know, we'd like
13 to start getting a technical report together on
14 that.

15 CUTLER: Remember you can't reinject. You have
16 to infiltrate.

17 RIPPERDA: I'd say that's debatable.

18 ROBLES: That's the thing. That's why we have
19 our eminent --

20 RIPPERDA: I think you, JPL in general, takes
21 kind of a generic rule or resolution or something
22 from the Regional Board and says that's cut and
23 dried. But regional boards in other regions allow
24 certain things that aren't necessarily -- you know,
25 it's like so many of the resolutions are so sweeping

1 that they do make allowances for site-specific, you
2 know, requirements.

3 CUTLER: I'm just saying what we were told. I
4 don't agree with it.

5 RIPPERDA: So I'm saying do your technical
6 report, decide what's best, and if rejection is
7 absolutely best, then you fight for what's best. If
8 reinjection isn't best, then you don't worry about
9 it. But I want to see a technical report on
10 optimization of the groundwater system.

11 HOSANGADI: You mean we fight.

12 RIPPERDA: What?

13 HOSANGADI: You mean we fight.

14 ROBLES: No. We fight with the Regional Board
15 or whoever.

16 RIPPERDA: You know, the BC -- what are we
17 called?

18 HOWELL: The lead agencies.

19 RIPPERDA: Yeah. Anyway, the RPMs. If
20 something is the best thing to do, I'm sure that
21 Alex would take it up his management chain.

22 ROBLES: Sure.

23 RIPPERDA: But EPA certainly, you know, is
24 willing to argue for what makes sense for the best
25 cleanup. You know, we love the Regional Board. We

1 work together, all a team. But sometimes EPA has
2 stupid rules and the Regional Board saying "EPA is
3 being stupid."

4 CUTLER: I'm not going to argue.

5 BURIL: I was going to say, Mark, you're looking
6 in the wrong place for an argument.

7 CUTLER: I was being facetious by saying you
8 can't do that. I wasn't -- this is what we were
9 told.

10 RIPPERDA: I just don't want a head-in-the-sand
11 kind of approach.

12 ROBLES: I think that we should do a technical
13 without the concern about what is --

14 RIPPERDA: Right.

15 ROBLES: -- what is optimum for making sure
16 because the whole issue is plume control. That, in
17 my mind, is one major issue in remediation. Not
18 only do we do source reduction, but how do we
19 control the plume. That's a basic concern. And
20 that's what we were looking at.

21 So we have had two meetings with the City
22 of Pasadena, and we will continue. The key is that
23 they're looking in the context of the Hahamongna
24 project and what the endangered species, in our mind
25 we don't believe that's going to be viable. By the

1 time they get their issues resolved with the
2 endangered species, we'll be way ahead.

3 That's why for us the spreading basin
4 option just became very unattractive once the Arroyo
5 Toad issue became involved. Because for them to
6 resolve it, it may be optimum for them to get it
7 through their system for them to do that and for us
8 to try to advocate it. It seems more likely that
9 the reinjection, we're going to look at it from the
10 technical side and see which is the best way to do
11 that.

12 So that's what we're looking at and that's
13 what we're pressing and that's why I wanted to get
14 clear to you about these options to let you know
15 where we're at.

16 Also is the fact that when we were talking
17 with the City of Pasadena, it was clear to us that
18 they had not taken it up their chain of command. We
19 were talking with the worker bees. And there is
20 that issue of trying to get through the City Council
21 on some of the issues. And that is a very arduous
22 process. I've worked with City Council before. And
23 that would delay our response.

24 So we were looking at what is the best way
25 so that when we are ready to do a remediation in

1 OU-1 and -3 that would get us quickly so that we can
2 implement this, because it's not enough just to say,
3 okay, we got a Record of Decision, now we take three
4 years to try to get through the City Council. It's
5 not going to help us in that sense. So that was one
6 of the issues that we were looking, and it looks
7 more and more to us favorable for reinjection from
8 that standpoint to keep it all in house to be able
9 to do that.

10 We will also be talking with the Raymond
11 Basin on Monday. They wanted to be here, but they
12 couldn't. So we will help brief them on what we
13 discussed and we want to work with them on that
14 because they have a major input on this as well for
15 the public.

16 So that's where we're at on OU-1 and -3.
17 So we'll be scheduling that. The toad issue is one
18 that's going to have to be involved and incorporated
19 into all documents in the future.

20 Any questions? Any other comments or
21 suggestions?

22 RIPPERDA: Before we move off groundwater, kind
23 of the same thing. It always comes up. But if you
24 do have to put wellhead treatment on any well for
25 perchlorate, there's still the whole purveyors'

1 issue and the DHS requirements.

2 Is anything being done on putting together
3 the impacted source report and kind of starting the
4 permit process for putting treatment systems on
5 purveyors' wells for perchlorate?

6 ROBLES: We're looking at that right now. Once
7 we get the contractor on board, we're going to work
8 on those issues. The biggest thing is what we're
9 looking at, once we sink a well next to their Arroyo
10 Well would we ever even consider giving them that
11 well in the future for use. That's where the impact
12 is.

13 Right now it doesn't look like we can
14 because there are legal issues of then we become a
15 purveyor, and so on. That's one of the things we're
16 trying to wrestle with right now. And we're trying
17 to understand the issues, the legal issues of doing
18 that. And that's one thing that we're getting --

19 RIPPERDA: My question is not about your new
20 well and giving that water to purveyors. It's what
21 about other wells that are currently owned by
22 Pasadena or other purveyors --

23 ROBLES: And to support that in their permit.

24 RIPPERDA: -- that are impacted by perchlorate,
25 JPL's perchlorate and if you have to put or fund a

1 perchlorate treatment system on their well, the DHS,
2 whatever its number is, requires a permit for new
3 treatment systems. I would expect JPL to be a very
4 active part of getting the permit for that treatment
5 system.

6 BURIL: Let me correct you and say NASA should
7 be.

8 RIPPERDA: I'm sorry.

9 ROBLES: NASA.

10 RIPPERDA: NASA should be very active in getting
11 the permit for that system.

12 ROBLES: Or should support them in getting a
13 permit because we wouldn't get a permit.

14 RIPPERDA: You would not get the permit, but
15 it's your perchlorate. You would be funding the
16 treatment system or working something out with the
17 purveyors. So I've been asking for this every
18 single meeting, but I want to see NASA starting on
19 the permit process in case it becomes required,
20 given how long we know any state or federal permit
21 takes.

22 ROBLES: Okay. Now, right now the only one that
23 would need a permit would be the one that is shut
24 off from the regulations. So the Arroyo Well, if
25 they ever wanted to bring it back on, we need a

1 permit.

2 CUTLER: Or any well that you want to put the
3 system on.

4 BURIL: Any well that was taken off line as a
5 result of contamination, to bring it back on line
6 would have to follow DHS requirements.

7 ROBLES: Right.

8 RIPPERDA: There are wells that are currently --
9 I don't know exactly, but I thought there was one or
10 maybe two wells --

11 ROBLES: There's one other well.

12 RIPPERDA: -- producing over 18 right now. But
13 with mixing, they're in compliance.

14 ROBLES: Right.

15 BURIL: Their Well 52 is still in the 50s now,
16 and they must blend it with the remaining two wells,
17 Ventura and Windsor, in order to make it usable for
18 public water supply.

19 RIPPERDA: So given that, I would expect at some
20 point that NASA would probably be putting a
21 perchlorate treatment system on a Pasadena drinking
22 water well. It's just my expectation. If this
23 whole pilot -- if something works out and you can
24 actually treat for perchlorate at, you know,
25 somewhat reasonable cost, EPA, and I'm sure the

1 State of California doesn't look favorably on water
2 being produced at three times a health-based level
3 and then blended and then sold to the public.

4 So I strongly urge you to start on the
5 highly impacted source review and any other
6 supporting documentation that would go into a
7 permit.

8 ROBLES: All right. Any other comments on item
9 4? All right.

10 Let's press on, then, to item 5, Superfund
11 Program Transfer Update.

12 Richard.

13 ZUROMSKI: Sure. Well, again, we probably
14 should have switched A and B on our contracts versus
15 transition/descoping plan. Do we want to address
16 the descoping plan at all?

17 ROBLES: That is being addressed by Chuck and
18 his group at JPL. We're looking at that the
19 administrative record will be transferred to the
20 contractor, Navy contractor by the end of the month?
21 By the 18th?

22 BURIL: 18th is the goal.

23 ROBLES: 18th is the goal. He's been working on
24 that. Money has been sent to the Navy. They have
25 received it. They are working on -- they're doing

1 interviews right now and they're getting the
2 contractors on board. So we're looking at that
3 right now. We're transitioning as fast as we can on
4 those items.

5 Right now they have a laundry list of
6 interviews. They have done some of them. They're
7 going to continue on, and at which time, then, at
8 the next RPM we can give you a list of what has been
9 selected, what has been chosen, what tasks have been
10 delineated and everything else.

11 ZUROMSKI: I think there's -- in the Federal
12 Facilities Agreement there's a requirement for
13 change of contractor requirement and notification of
14 change of contractor. And I think that probably by
15 or before the next -- probably before the next RPM
16 meeting we will have provided you with that
17 information.

18 ROBLES: So we'll give you which tasks, which
19 contractors will be responsible and everything else
20 on that so that you have all points of contract on
21 that because that part we have to inform you.

22 RIPPERDA: Okay.

23 ROBLES: But they have received their money.

24 ZUROMSKI: Right.

25 ROBLES: They're working on it.

1 Any questions? Okay.

2 Let's see if we can get Carlos, to go back
3 to number 1.

4 BURIL: So that means we say good-bye to Heike.

5 RIPPERDA: Yeah. Are you still there, Heike?

6 MUELLER: Yes, I am.

7 RIPPERDA: Well, thank you very much. And
8 I'll --

9 ZUROMSKI: Do you want to address other items
10 first before we go?

11 RIPPERDA: Before you go, did you have any other
12 questions or comments?

13 MUELLER: No, I don't. No, not at this point.

14 RIPPERDA: Okay. Then we're going to try to get
15 Alex Carlos from the Board on.

16 MUELLER: Okay. Sounds good.

17 RIPPERDA: And I'll probably talk to you next
18 week. Are you going to be in the office tomorrow?

19 MUELLER: Yes, I will be. But I will be out
20 Monday and Tuesday.

21 RIPPERDA: I'll try calling you next Wednesday.

22 MUELLER: Okay.

23 RIPPERDA: Thanks.

24 MUELLER: Bye-bye.

25 RIPPERDA: Bye.

1 (Discussion held outside the record.)

2 ZUROMSKI: Let's go back to the other items
3 again. Are there any other items that we want to
4 address?

5 BURIL: Quickly. Through oversight or whatever
6 else, we have not formally approved the last two
7 Remedial Project Manager meeting minutes. I'm going
8 to ask you all to scratch your collective memories
9 and please offer up any recollections that you may
10 have. If not, I'd like to finalize those as
11 finished and be ready to deal with them as such.

12 ZUROMSKI: I'd like to know if you have received
13 our comments on them and incorporated them.

14 BURIL: Oh, yes.

15 ZUROMSKI: So they were received?

16 NOVELLY: Didn't you get a final copy?

17 ZUROMSKI: Probably. But I didn't look to see
18 if the final comments were incorporated, so --

19 NOVELLY: Always. Yes.

20 ZUROMSKI: I have no problems, then.

21 RIPPERDA: I'm impressed that you made comments
22 on the minutes.

23 BURIL: Hearing no concerns --

24 GEBERT: I have no concern.

25 BURIL: -- we should ask the same question of

1 Alex when he's on the line. But for the last couple
2 meetings we'll go ahead and finalize those and have
3 them made available to be put in the repositories.

4 ROBLES: Do you want to go a little bit on the
5 fluid bed reactor?

6 ZUROMSKI: I want to see if there are still any
7 other items.

8 RIPPERDA: Under other items, I've talked with
9 two local attorneys in the last month, and they've
10 both come to my office to photocopy documents that
11 they could not find in the local repositories.

12 BURIL: For example?

13 RIPPERDA: The soils RI.

14 BURIL: Which repository was that, and when did
15 they look?

16 NOVELLY: They were looking in the Pasadena one.

17 RIPPERDA: Yeah. One of them went to Pasadena
18 and the other one went to all three. So just either
19 the libraries are not like giving good directions or
20 somebody has taken them or --

21 ROBLES: Somebody has taken them.

22 BURIL: We do have a monthly, or we had up until
23 this month a monthly monitoring of the repositories.
24 And the RI is one of the documents that should be
25 there. And when we do monitor, if we note that

1 documents are missing, we do replace them. So
2 either they got there after a document had been
3 removed or they were not directed to the right
4 location.

5 NOVELLY: We went and reaudited right after you
6 called, like about three days after, and they were
7 not -- they couldn't find them either. So we put a
8 new copy in.

9 RIPPERDA: So it's like you can't control people
10 taking these documents.

11 NOVELLY: Right.

12 BURIL: That's right. They grab them and run.

13 RIPPERDA: Right. Monthly monitoring, you know,
14 seems fine to me. Just so long as you're aware that
15 these are disappearing occasionally and you continue
16 your monthly monitoring.

17 BURIL: Are you listening, Richard?

18 ZUROMSKI: I did. I made sure. Because we're
19 getting the contractor on board. I think that's one
20 of the questions that we need to make sure.

21 NOVELLY: That's why we started the monthly
22 audit because we had been doing it, you know, before
23 then not on a regular monthly basis. And then when
24 we noticed that the documents were starting to pick
25 up on their disappearance, we moved it up to a

1 regular one.

2 RIPPERDA: The fact sheet that you guys produced
3 months ago now, that actually went out to the
4 public. Right?

5 BURIL: Yes.

6 RIPPERDA: With litigation and things going on,
7 who knows who is taking documents. But a lot of
8 sites, you know, have a mailing list of interested
9 public --

10 BURIL: We have one that's about 20,000 people
11 long.

12 RIPPERDA: Well, not one that long. Highly
13 interested. People who are interested in actual --

14 ROBLES: Highly interested.

15 RIPPERDA: -- voluminous documents. A lot of
16 sites you end up sending out, you know, ten or so
17 documents to people who are actually interested in
18 reading them. It might actually be time for another
19 fact sheet at the end of these pilot studies.

20 I should be talking to you.

21 HOWELL: We've talked about the fact sheets,
22 whether or not we need to update those.

23 RIPPERDA: So another strong urging, at the end
24 of these pilot studies when you know something about
25 treating for perchlorate, you know, I think it would

1 be time for another fact sheet and along with that
2 fact sheet would be a request from the public that
3 anybody who is interested, contact one of you to
4 kind of talk to you in person.

5 ZUROMSKI: Sure.

6 RIPPERDA: And if they're interested enough,
7 they should be added to a mailing list of final
8 documents. That might or might not cut down on
9 things being stolen from the library.

10 ZUROMSKI: I just can't see how something can be
11 stolen from the library because I've never been able
12 to do that myself.

13 BURIL: These documents do not have the --

14 ZUROMSKI: Oh, they don't have the bar code?

15 BURIL: -- electronic bar code or sensor on
16 them.

17 RIPPERDA: The library does not want to track
18 these because they're not --

19 ZUROMSKI: So they're not -- then they're not
20 like regular library information.

21 BURIL: In fact, the library in Pasadena has
22 made it known to us, although not formally, that
23 they don't particularly like keeping the repository.
24 It's gotten too big.

25 ZUROMSKI: Okay. Well, we may have our

1 contractor go in and make sure, then, that we're --
2 make sure it's all streamlined so that we can track
3 it a little bit better. But if that's the case,
4 then we'll probably have the same problems.

5 BURIL: You will probably see the same thing.

6 ZUROMSKI: That's fine.

7 ROBLES: Any other items under other items?

8 Any other concerns, comments?

9 RIPPERDA: Anything happening with litigation
10 that you can share with us?

11 HOWELL: Share?

12 BURIL: All eyes are on Tim.

13 HOWELL: Just that the Department of Justice is
14 still involved. There still is litigation. There
15 has been some rulings by the Court that were
16 favorably received by the government, but not all
17 issues have been resolved and there's been some
18 appeals to the judge's ruling. So, the whole
19 judicial process grinds on.

20 RIPPERDA: Good job.

21 ZUROMSKI: It's a good attorney's answer.

22 BURIL: It's moving at a glacial pace. Let's
23 put it that way.

24 RIPPERDA: So the attorney -- one reason why --
25 I don't care how much JPL or NASA have to pay out to

1 the public except maybe as a taxpayer. But I do
2 care when private attorneys are calling me up and
3 coming to my office and bugging me.

4 HOWELL: Why are they calling you?

5 RIPPERDA: Because they don't trust you guys to
6 be giving them the documents, I guess. I don't
7 know.

8 HOWELL: We're not getting requests for
9 discovery. We're not getting requests under the
10 Freedom of Information Act.

11 RIPPERDA: So whatever. Like where are we in
12 the litigation? Is it now like motions between NASA
13 and JPL, or is it moving forward towards a jury
14 trial? What's happening?

15 HOWELL: The latest action from the judge was
16 that the United States was dismissed from the
17 lawsuit. And there have been some appeals to that,
18 which means that there has been a ruling, but
19 there's appeals, so you never know what's going to
20 happen.

21 RIPPERDA: So you're speaking very parochially
22 as a purely NASA interest person. But in the
23 greater scheme of things, is this moving towards a
24 jury trial of --

25 HOWELL: I have no idea.

1 RIPPERDA: Okay. I will stop asking you
2 questions.

3 HOWELL: That question, I have no way to answer
4 that question.

5 RIPPERDA: So that concludes my questions.

6 GEBERT: You actually give up. Right?

7 ZUROMSKI: If we could just get Tim to run the
8 whole meeting, we'll be done in ten minutes.

9 ROBLES: I basically believe that by the time we
10 have remediation in sight we still won't get an
11 answer because it's going to take a long time. And
12 I know the frustration that you have with it. But
13 honestly, we have not had requests.

14 RIPPERDA: Actually, my frustration is not that
15 big. But I hate not knowing anything about what's
16 going on when --

17 HOWELL: But it is interesting to me that you
18 are being contacted by attorneys when -- I mean,
19 obviously, you got your own policy with regard to
20 whether you deal with them or simply refer them back
21 to us.

22 But I don't know why they would be
23 approaching EPA when there certainly are avenues to
24 get information from us, which ones that have to
25 comply. We have to comply with the same laws that

1 you have to comply with. I mean, if there is
2 ongoing litigation, obviously, discovery is
3 available. And Freedom of Information Act is
4 available to anybody any time. And there is
5 information that's already publicly available in the
6 reading room, and that's easy to get to, also. So I
7 mean, if EPA is tired of them banging on your
8 door --

9 RIPPERDA: No, it's not that. It's like
10 whatever. I am a public servant. God, I like --
11 and these have been official FOIAs so I can't just
12 blow them off. But it's not so much like, oh, God,
13 another request for documents. It's just that I'm
14 dealing with attorneys and the next thing I expect
15 to be dealing with members of the public.

16 HOWELL: Right.

17 RIPPERDA: I just want to know what's going on.

18 HOWELL: But if there is a burden issue, or if
19 it's something that we need to talk about, we'll
20 talk about it, then. But if it's not a burden yet,
21 then good. But if it does, then let's talk about
22 it.

23 RIPPERDA: Okay.

24 HOWELL: Because we don't want to place an undue
25 burden on the EPA for something that can be made

1 available, you know, with everybody knowing that
2 it's available there.

3 BURIL: Mark, did they identify for whom they
4 were working?

5 RIPPERDA: Yeah.

6 BURIL: And that would be something we won't
7 discuss.

8 RIPPERDA: Yeah. You know, I actually don't
9 know what the rules are on FOIAs and what I can give
10 out to other people about FOIAs that have come to
11 me.

12 BURIL: Was the term "I withdraw the question"?

13 RIPPERDA: Even if I could, I wouldn't remember
14 the -- it's like they both were working for two
15 completely different law firms. They both have lots
16 of names in their titles.

17 BURIL: Okay.

18 RIPPERDA: I truly don't remember any of their
19 names.

20 HOWELL: The more names on the letterhead, the
21 bigger the firm. The bigger and higher the --

22 BURIL: Higher the fees that go along with it.
23 Okay. That makes sense.

24 HOWELL: Do you want to try again?

25 ZUROMSKI: Try one more time.

1 RIPPERDA: Yeah.

2 (Discussion held outside the record.)

3 ZUROMSKI: I guess I can address the issues on
4 groundwater pilot studies and the two items here,
5 concerns with the sanitary sewer and the Regional
6 Board.

7 Last Thursday, I think it was, almost a
8 week ago, I know that we raised this issue with the
9 letter that you sent to us with the Regional Board
10 over, what, two months ago or a month and a half
11 ago. And just last Thursday a person from Alex's
12 permitting department, Gary Schultz, called along
13 with Alex on the phone and started and asked several
14 questions regarding our different options for
15 discharge from our pilot system.

16 And we said that, according to the pilot
17 systems that we've operated here, especially with
18 the Calgon system in the past, we complied with the
19 substantive requirements of the permit that were
20 listed in the EPA letter and we discharge to the
21 storm sewer. And that's what we're planning on
22 doing this time.

23 So then they said, well, why, number one,
24 I guess -- I don't know if Alex had talked to him in
25 the past or not, but he asked why, number one, are

1 we not looking at discharging to the sanitary sewer.
2 And also, there was another question regarding some
3 other siting issue. I don't remember what that was.

4 But anyway, so I called Chuck and then I
5 wrote an e-mail back to them and answered their
6 questions. And they still -- Alex called me this
7 morning and said that they've presented these things
8 up to the Board and -- or to whoever Gary's superior
9 is in the permitting section, and they haven't had
10 any feedback yet. But I think that we all know
11 that -- I think we're continuing forward anyway with
12 discharging to the sanitary sewer based on --

13 BURIL: No.

14 ROBLES: Storm sewer.

15 ZUROMSKI: Excuse me. The storm sewer based on
16 complying with the substantive requirements. And I
17 think one of the reasons we didn't want to go to the
18 sanitary sewer because Chuck had called them back
19 during the Calgon pilot test.

20 BURIL: The sanitary folks basically say they do
21 not want to accept groundwater discharges under any
22 circumstances.

23 ZUROMSKI: Right.

24 RIPPERDA: Because of volume?

25 BURIL: Volume is one issue and just --

1 ZUROMSKI: Precedence.

2 BURIL: -- precedence being set for potential
3 higher volumes in the future.

4 RIPPERDA: These are your on-site facilities
5 folks?

6 BURIL: No, no. This is County Sanitation.

7 ZUROMSKI: Now, of course, that was two years
8 ago and we haven't called them back and the Regional
9 Board didn't ask me to call them back and give them
10 new information. And so I'm assuming that we're
11 still moving forward as we are. Unless I hear
12 otherwise, I'm pretty sure that's how we're
13 proceeding. And we're taking all the required
14 samples and planning on complying with all the
15 substantive requirements.

16 So I was hoping that Alex was basically
17 going to call us or talk to us today about getting
18 some final information, get some closure on this.
19 Because actually they sent a Regional Board guy out,
20 one of the new guys in the office, Raul Medina. And
21 he came out and took a look at the pilot system that
22 you'll see today and took some -- a couple pictures
23 of it, went over to the discharge into the Arroyo
24 from the storm sewer, took a couple pictures of it.

25 We went out into the Arroyo, showed him

1 that it's basically a dry river bed and this is
2 where the water's going. He took a couple pictures
3 of it.

4 So I just don't know what they're actually
5 doing right now, if they're trying to figure out.
6 You know, again, maybe it's a precedent issue with
7 them as well, is this going to set a precedent. I
8 don't know. I really have no idea what they're
9 thinking.

10 BURIL: I can't imagine it would be a precedent
11 issue because they've had CERCLA sites in this area
12 for years.

13 ZUROMSKI: Right. So, in any event, we were
14 hoping to get some kind of response from them,
15 whether or not it was for or against what we're
16 doing. I don't know. And we just haven't heard
17 anything yet.

18 And so -- but at this point, the pilot
19 system that you'll see up there today, the U.S.
20 Filter fluidized bed reactor is there now currently
21 running in what they're calling a recirculation.
22 Basically, they're building up the biomass within
23 the biological filter and it runs for about a week
24 where they're building basically the bugs that will
25 degrade the nitrate and the perchlorate. And so at

1 this point in time we're not really discharging.
2 So we're not really going to have to deal with this
3 until probably next week when we actually start
4 pumping and treating the water through the system.
5 I'm hoping we hear something from them by then.

6 But in the meantime we're still moving
7 forward with -- they're actually going to take some
8 samples of the extracted groundwater this week to
9 see what our -- basically compare the numbers that
10 we had looked at a while back to what it is right
11 now and see what we're dealing with. And, you know,
12 other than that, they got a whole sampling protocol
13 set out, which I think I had sent you originally in
14 that plan that
15 we -- that they had, but it's been revised, not --
16 basically based on Mark's comments, so if fits your
17 comments as far as the weekly sampling and for all
18 the different constituents, et cetera.

19 So there shouldn't be any major issues,
20 but, again, I don't know --

21 ROBLES: I think we also have a backup system on
22 there so that --

23 ZUROMSKI: We do have a backup. Exactly.

24 ROBLES: So explain that a little bit to them.

25 ZUROMSKI: And I think that we've designed the

1 system with enough failsafes that nothing is going
2 to come out of the system, dead or alive. I think
3 that there's -- we have four carbon canisters on the
4 influent to take care of VOCs. We have the
5 fluidized bed reactor, which you'll see, which is
6 for the nitrate and perchlorate, which should
7 destroy that all down to nondetectable levels. Then
8 as another failsafe on top of that, there's an
9 aeration system, and then it goes into an ion
10 exchange system.

11 So if by some remote possibility some
12 perchlorate gets through this fluidized bed, because
13 we may be adjusting parameters or trying to optimize
14 the system, the ion exchange system is going to
15 knock out all the perchlorate. And then even on the
16 end of that system we have two more carbon beds.

17 So the likelihood of us discharging
18 anything to the Arroyo is really very unlikely. And
19 I think that their biggest issue was the two
20 constituents, sulfate and chloride, which I think we
21 talked with them about on the phone about. And
22 that's really what people have been wrestling with
23 right now. And that's also why I'm having the
24 contractor take these confirmation samples this week
25 of the extracted groundwater to see if there's even

1 still an issue. Because I'm hoping that we were so
2 slightly above their two requirements, which just so
3 happen to be more stringent than drinking water
4 requirements because they're having other issues
5 with us using drinking water to blend because the
6 drinking water has higher mineral constituents than
7 they'll allow us to discharge. So we're dealing
8 with that as well. But I think that's what they're
9 trying to deal with right now.

10 And so I'm hoping that -- you know, we've
11 told them how much groundwater we're going to treat
12 and discharge, and with all that information we
13 should -- I think that Gary has indicated, at least
14 on an unofficial level, that it shouldn't be a big
15 deal. But if it shouldn't have been a big deal,
16 then I just don't understand why we haven't received
17 a call from them so far.

18 BURIL: Let me ask a question, Mark. I don't
19 know if you have an answer ready at hand. Given our
20 CERCLA status, does the Regional Board have
21 authority to step in and stop this as a result of
22 having no permit?

23 RIPPERDA: My answer is no.

24 HOWELL: And that, of course, is the correct
25 answer.

1 BURIL: I agree. It is the correct answer.

2 ROBLES: So that answers the permit issue.

3 ZUROMSKI: So, anyway, that's the issue with
4 that right now.

5 You'll see the system up there today. You
6 know, I have some -- I'm going to get -- the
7 Regional Board is going to hopefully e-mail me those
8 copies of the photographs that they took of the
9 system. I'll e-mail it to everybody. You guys can
10 take a look at all that. And if you have any
11 questions, both the operator who is going to be out
12 here on a daily basis, plus the technical guy who is
13 just basically here for the start-up are both here
14 to basically walk you through the system today. If
15 you have any questions, don't look at me, look at
16 them. I can tell you the general flow and how
17 things are working, but if you have anything
18 specific, and he'll probably explain it in pretty
19 significant detail anyway, feel free just to ask
20 because they're pretty forthcoming with any
21 information that you need.

22 BURIL: And I have my truck here that I can
23 ferry a good number of us up there.

24 ZUROMSKI: I was thinking we could walk on maybe
25 a beautiful day like today, but if you'd like to

1 drive -- it's a fairly short walk.

2 BURIL: You have a choice.

3 ZUROMSKI: It's up to you. I've been walking up
4 there almost daily for the last week or so since it
5 was delivered out here. I just get used to it.

6 But that's basically it. So any other
7 issues specifically on the pilot study itself we'll
8 just address them out there.

9 So do you guys have anything else on that
10 item at this point?

11 GEBERT: No.

12 ZUROMSKI: Okay. I guess the choice, then, on
13 pilot study tour number 7 is -- it's 11:30. We can
14 eat lunch and then go up there or we can go up there
15 and eat lunch.

16 RIPPERDA: This is very similar to the Calgon
17 system?

18 ZUROMSKI: It's not.

19 BURIL: Absolutely totally different.

20 RIPPERDA: I don't mean that -- that was a
21 stupid word.

22 ROBLES: It's a piece of hunk of equipment out
23 there. That's all it is.

24 RIPPERDA: The scope and size of this is very
25 similar?

1 ROBLES: Yes.

2 RIPPERDA: So it's basically the kind of thing
3 that unless I care to learn how to design this
4 myself for my future consulting career, it's the
5 kind of thing I can see in --

6 ROBLES: Pictures.

7 RIPPERDA: -- 15 minutes.

8 ZUROMSKI: I'm going to say half hour max.

9 RIPPERDA: I would want to go see it now.

10 ROBLES: So you can get on a plane later.

11 RIPPERDA: Yes.

12 ZUROMSKI: Fine. We can do that.

13 I guess our next item agenda I guess
14 should have been number 8, is the next meeting.

15 ROBLES: Yes. If nobody has any other issues or
16 anything else, let's decide on when we will meet
17 again.

18 ZUROMSKI: Every three months?

19 BURIL: Three months hence will be December.

20 ZUROMSKI: So it would be beginning of December,
21 first week of December?

22 GEBERT: Any reason we should meet earlier than
23 that?

24 ROBLES: I've got a feeling that maybe November
25 might be better. I see in your eyes, and I feel the

1 same way, I think we need to meet sometime in
2 November.

3 RIPPERDA: I think there's enough going on with
4 the pilot study, with the proposed plan coming up
5 and the holidays coming later in December that it's
6 probably better to go for November.

7 ROBLES: Talking about maybe the middle of
8 November to give us time?

9 ZUROMSKI: Week of the 13th, maybe?

10 ROBLES: The week of the 13th?

11 ZUROMSKI: That's the week before Thanksgiving.

12 BURIL: Be aware they're putting together an ENB
13 meeting at headquarters for the last week of
14 November, just so we keep that one aside.

15 ROBLES: The last week in November. We do the
16 13th.

17 RIPPERDA: Either the week before that or that
18 week; whatever. Like I don't know how the schedule
19 is going to be looking like by then. But whatever
20 kind of dovetails the most nicely with --

21 ZUROMSKI: Which? The week of the 13th?

22 RIPPERDA: -- reports or anything else that's
23 happening.

24 ZUROMSKI: Thursday, the 16th?

25 GEBERT: Is that the second Thursday, 16th?

1 ZUROMSKI: That's the third Thursday, actually.

2 GEBERT: That's fine, then. 16th is okay.

3 ROBLES: Why don't we shoot for the 16th, then,
4 of November.

5 ZUROMSKI: Okay. 9:30 here again?

6 ROBLES: Yes.

7 RIPPERDA: And then a conference call in
8 October.

9 ROBLES: Yes.

10 BURIL: First Thursday of the month.

11 RIPPERDA: So that would be the 5th.

12 ZUROMSKI: What time do we do the conference
13 calls? 10:00?

14 RIPPERDA: Yes.

15 GEBERT: October 5th.

16 ZUROMSKI: Okay.

17 ROBLES: So we'll have a telecon on the 5th of
18 October at 10:00 o'clock and we will have our next
19 RPM meeting on the 16th of November at 9:30, same
20 time, same station, right here. Okay?

21 ZUROMSKI: Good.

22 RIPPERDA: What about the other pilot study
23 that's starting up?

24 ZUROMSKI: Oh. Sure. It's going to basically
25 start at the end of the U.S. Filter. Actually, I've

1 received a proposal from them. Actually, these guys
2 are here, Foster Wheeler, and we're evaluating it
3 and negotiating it over the next week or so. So
4 then we're going to get them in there, process
5 going. As soon as U.S. Filter is done, I think
6 they're going to do 60 days, we'll move the other
7 folks in right after that. Basically we've already
8 set up the site for electricity and water discharge
9 and all that stuff so it should be a quick change,
10 in and out.

11 ROBLES: Okay. Any other comments before we
12 close for the tour? Going, going, gone.

13 Okay. The meeting is adjourned. Thank
14 you.

15 (The proceedings adjourned at 11:35 A.M.)
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1/7/00 RPM Meeting @ NASA-JPL

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